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**COUNTY OF LOS ANGELES  
DEPARTMENT OF PUBLIC WORKS**

*"To Enrich Lives Through Effective and Caring Service"*

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**ADOPTED**

BOARD OF SUPERVISORS  
COUNTY OF LOS ANGELES

31 August 16, 2016

LORI GLASGOW  
EXECUTIVE OFFICER

August 16, 2016

The Honorable Board of Supervisors  
County of Los Angeles  
383 Kenneth Hahn Hall of Administration  
500 West Temple Street  
Los Angeles, California 90012

Dear Supervisors:

**LOS ANGELES COUNTY WATERWORKS DISTRICT NO.36, VAL VERDE  
APPROVAL OF WATER SUPPLY ASSESSMENT FOR LOS VALLES  
(SUPERVISORIAL DISTRICT 5)  
(3 VOTES)**

**SUBJECT**

This action is to approve the Water Supply Assessment for the Los Valles Project in the unincorporated County of Los Angeles area of Val Verde.

**IT IS RECOMMENDED THAT THE BOARD ACTING AS THE GOVERNING BODY OF THE LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 36, VAL VERDE:**

1. Find that the action set forth in this Board letter is not a project pursuant to the California Environmental Quality Act.
2. Approve the Water Supply Assessment for the Los Valles Project in the unincorporated County of Los Angeles area.

**PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION**

The purpose of this action is to approve the enclosed Water Supply Assessment required by California Water Code Section 10910, et seq., showing that the Los Angeles County Waterworks District No. 36, Val Verde, currently has sufficient water supplies for the proposed development.

**Implementation of Strategic Plan Goals**

The Countywide Strategic Plan directs the provision of Community Support and Responsiveness (Goal 2) by ensuring a reliable supply of water for the District's customers.

### **FISCAL IMPACT/FINANCING**

There will be no impact on the County General Fund.

### **FACTS AND PROVISIONS/LEGAL REQUIREMENTS**

The California Water Code Section 10910, et seq., requires the District to prepare an assessment for the projects in the District's service area subject to the California Environmental Quality Act (CEQA), which would involve a project that demands an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling-unit project. The water demand for the Los Valles Project meets this criteria and, therefore, is subject to this assessment. The Project is located near the intersection of Hasley Canyon Road and Del Valle Road.

The assessment must include a discussion with regard to whether the District's total projected water supplies available during normal, single-dry, and multiple-dry water years, during a 20-year projection, will meet the projected water demand associated with the Project, in addition to the District's existing and planned future water uses. Pursuant to California Water Code Section 10910(g)(1), the Board must approve the assessment at a regular or special meeting.

The District is not required by the California Water Code to prepare its own urban water management plan. However, the District has included water demands for its service area boundaries in both the 2010 and 2015 Regional Urban Water Management Plans prepared and adopted by the Castaic Lake Water Agency. The District service area lies completely within the Castaic Lake Water Agency service area boundaries.

The assessment for the Project was prepared in accordance with the requirements of California Water Code Section 10910, et seq.

### **ENVIRONMENTAL DOCUMENTATION**

The proposed action is required by California Water Code Section 10910(g)(1) and, therefore, does not constitute a discretionary approval by the District that would be subject to CEQA. Pursuant to California Water Code Section 10911(b), the Department of Regional Planning, as the land-use authority responsible for approving the specific plan in question and the lead agency under CEQA for the Project, is required to include the assessment provided by the District in the environmental impact report that the Department of Regional Planning is processing for the Project.

### **IMPACT ON CURRENT SERVICES (OR PROJECTS)**

There will be no negative impact on current County services or projects during the performance of these actions.

### **CONCLUSION**

Please return one adopted copy of this letter to the Department of Public Works, Waterworks Division.

The Honorable Board of Supervisors

8/16/2016

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Respectfully submitted,

A handwritten signature in cursive script that reads "Gail Farber".

GAIL FARBER

Director

GF:AA:ea

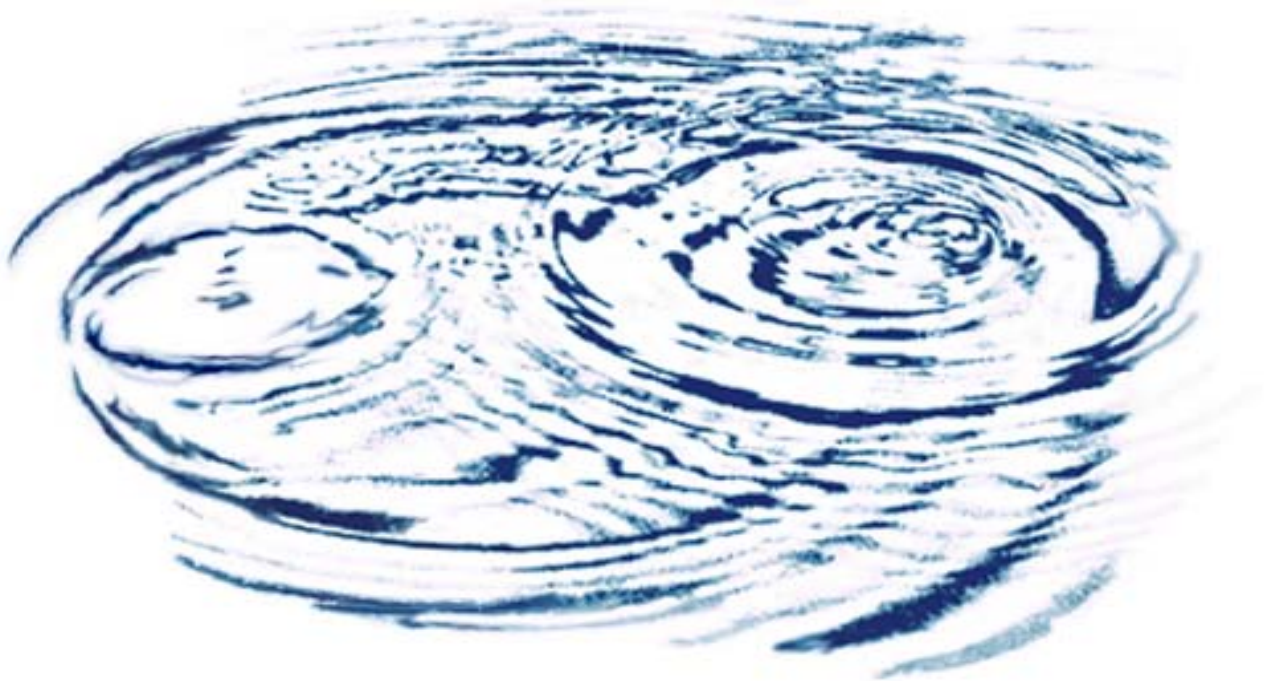
Enclosures

c: Chief Executive Office (Rochelle Goff)  
County Counsel  
Executive Office  
Department of Regional Planning

# **LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 36**

## **LOS VALLES PROJECT WATER SUPPLY ASSESSMENT**

**MAY 2015**



**Prepared for:**

**SFI Los Valles, LLC**



**Stetson Engineers Inc.**

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## **Summary**

The project is a 497 unit single-family residential community proposed to be developed on 430.4 acres of land owned by SFI Los Valles LLC (Applicant), in the community of Castaic, an unincorporated portion of Los Angeles County (Property). The Property is located north of Hasley Canyon Road near its intersection with Del Valle Road.<sup>1</sup> LACWWD36 is a retail water purveyor and is within the service area of Castaic Lake Water Agency (CLWA), which is a wholesaler providing water to four retailers in the Santa Clarita Valley.

The Property is located entirely within the boundaries of the Castaic Lake Water Agency and almost entirely within the boundaries of LACWWD36. As shown on Figure 1, a small portion of the Property is not within the boundary of any retail supplier and another small portion of the Property is within the service area boundaries of the Valencia Water Company. The Applicant has requested de-annexation from the Valencia Water Company boundaries and is preparing an application to the Los Angeles County Local Agency Formation Commission for an extension of the Sphere of Influence for LACWWD36 to include portions of the Property currently outside of the LACWWD36 boundaries and subsequent annexation of these areas into LACWWD36. For purposes of analysis, this Water Supply Assessment assumes that the entirety of the Property will be in the service area of LACWWD36 prior to occupancy of any homes at the Proposed Project.

The Applicant is proposing construction on the Property of a single-family residential development of 497 dwelling units on lot sizes averaging 12,500 square feet over

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<sup>1</sup> The Property was subject to prior entitlement by the County of Los Angeles as a golf course and residential development of 209 homes. At the time of that entitlement (in 2002), the County determined that 769 acre feet of water would be required on an annual basis to meet potable and landscaping requirements of the prior project. In connection with those prior entitlements, the Applicant completed a water well and related structures and has dedicated that well and the surrounding land to LACWWD36.



approximately 111 acres<sup>2</sup>, together with community amenities for residents and the public including a community recreation center controlled by a homeowner's association and a public park, and containing approximately 144 acres of irrigated areas (excluding private house lot pads) as further described in Appendix A (the Proposed Project). As further described below, overall water demand for the Proposed Project is estimated at 593 acre-feet per year (AFY) in normal years and 666 AFY in single and multiple dry years. However, the demand for water will begin with a demand for construction water only (approximately 40 AFY) and will increase gradually as the Proposed Project is constructed over the 5 to 7 years of anticipated buildout. Although buildout may occur at a later date due to market conditions or other issues, this Assessment conservatively assumes the Proposed Project will commence in 2015 and that the full demand of the Proposed Project for water will occur in 2020 in order to assure that water demand at each stage of the Proposed Project can be met.

The Property is currently entitled for 209 units of housing and a golf course, pursuant to 2002 approval by the County of Los Angeles of a vesting tentative tract map and various related entitlements (Previous Project). The Final Environmental Impact Report (EIR) for the Previous Project (certified in 2002) indicated total water demands for the Previous Project would be 769 AFY, and would be supplied through imported water sources provided by CLWA and from groundwater from the Saugus Formation, which are similar to the water supply sources for the Proposed Project.

The Proposed Project incorporates numerous features to reduce water usage, including a substantial amount of non-irrigated land area with a mix of low-intensity uses and a very efficient irrigation system with water demand requirements less than what a more typically landscaped residential community would require. As a result, despite the

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<sup>2</sup> Based on an average lot size of 12,500 sq. ft., the total area for dwelling units is approximately 142 acres and includes an area of approximately 111 acres of house lot pads and an area of approximately 31 acres of privately owned irrigated slopes. Portions of the irrigated privately owned slopes are also included in the irrigation demand estimates associated with other sloped areas of the Project (discussed in Section 2.2). As a result, the projected water demand estimates for the Project conservatively include the privately owned slope water demands under both use descriptions.

increase in total housing units from 209 units to 497 units, the Proposed Project results in an estimated reduction in water demands in normal years of 176 AFY of water and 103 AFY<sup>3</sup> in dry years as compared with the Previous Project approved by the County in 2002. In addition, while the golf course and other landscaping in the Previous Project required 3.3 AFY of water per acre, the proposed irrigated areas for the Proposed Project require only 1.4 AFY of water per acre.<sup>4</sup>

The Proposed Project's water demands are anticipated to be wholly met through water provided by LACWWD36. This Assessment has been prepared to meet the requirements of California Water Code Division 6, Part 2.10, Sections 10910-10915 (Water Supply Planning to Support Existing and Planned Future Use) and Government Code 66473.7. The analysis relies upon the CLWA's 2010 Urban Water Management Plan (CLWA's 2010 UWMP) which is a planning document analyzing water supply and demand for the CLWA service area, including the LACWWD36 service area for a forty year period.<sup>5</sup>

As further described in the CLWA's 2010 UWMP, LACWWD36 currently meets its water demands by pumping groundwater from the Saugus Formation and through the purchase of imported water supplies from CLWA. Groundwater production pursuant to the groundwater operating plan and the Groundwater Management Plan (for the Santa Clara River Valley Groundwater Basin, East Subbasin) prepared by CLWA and adopted in 2003, allows LACWWD36 to meet its groundwater pumping requirements from the Saugus Formation. LACWWD36 can purchase treated imported water through its existing connection with CLWA. CLWA's water supply sources include California State Water Project water, Flexible Storage Accounts (with State Water Project contractors in

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<sup>3</sup> Conservatively based on 769 AFY from the Previous Project (during normal years) less 666 AFY from the proposed Project (during dry years). A dry year analysis was not required at the time the Previous Project was approved.

<sup>4</sup> See Hasley Canyon Project Addendum to Final Environmental Impact Report (SCH#98071037), August 2002 (Addendum) at p. 5.

<sup>5</sup> LACWWD 36 is not required to prepare an UWMP because the District does not provide water to more than 3,000 customers or supply more than 3,000 acre feet (AF) of water annually; however, LACWWD 36 participated in the development of the Plan on an "ad-hoc" basis. CLWA's 2010 UWMP, p. 1-3.

Ventura County), water transfer agreements (with Buena Vista Water Storage District and Rosedale Rio-Bravo Water Storage District), groundwater banking programs (with Semitropic Water Storage District and Rosedale Rio-Bravo Water Storage District), and recycled water. These water supply sources available to CLWA provide reliability and flexibility and allow water purveyors within CLWA's service area, including LACWWD36, to meet all water demands. Additional water supplies available to other water purveyors within CLWA's service area, including groundwater from the Alluvial aquifer and recycled water, reduce overall demands for imported water supplies, which increases the imported water supplies available to LACWWD36 through CLWA.

In satisfaction of a condition of approval by the County of Los Angeles of the approved Previous Project, the Applicant provided LACWWD36 with a new groundwater production well in January 2012 that produces from the Saugus Formation. As a result of obtaining the well, groundwater from the Saugus Formation is now a source of water supply for LACWWD36 and LACWWD36 will supply groundwater to its customers, including the Proposed Project, as needed to meet water demand within its system, making use of an additional on-site well by the Proposed Project unnecessary.

Based on the demonstrated reliability of its water supply sources, and taking into account existing and planned future water uses (including relevant agricultural and manufacturing uses), LACWWD36 has sufficient, reliable, and sustainable water supplies to meet existing water demands and future growth, including the Proposed Project, during normal, single dry and multiple dry years, for a 20 year period.

## **1.0 Introduction**

The Proposed Project would be constructed on approximately 430.4 acres of land (Property) in the community of Castaic, an unincorporated portion of Los Angeles County in the Santa Clarita Valley, north of Hasley Canyon Road near its intersection with Del Valle Road (See Figure 1). The Property is owned by SFI Los Valles, LLC (Applicant).

As shown in Figure 1, a majority of the Property is located within the Los Angeles County Waterworks District No. 36 (LACWWD36) service area. A small portion of the Property is not within the boundary of any retail supplier and another small portion of the Property is within the service area boundaries of the Valencia Water Company (VWC). The portion of the Project not within the boundary of any retail supplier is proposed to be annexed into LACWWD36's service area. The portion of the Property within VWC is proposed to be de-annexed from VWC's service area and annexed into LACWWD36's service area. The Property is located entirely within Castaic Lake Water Agency's (CLWA) service area. CLWA is a regional agency providing wholesale deliveries of imported California State Water Project (SWP) water, wholesale recycled water supplies, and wastewater treatment, including to LACWWD36. Figure 2 shows the majority of CLWA's service area, LACWWD36's service area, and the Property.

The Proposed Project consists of a single-family residential development of 497 dwelling units on lot sizes averaging 12,500 square feet over approximately 111 acres, together with community amenities for residents and the public including a community recreation center controlled by a homeowner's association and a public park, and containing approximately 144 acres of irrigated areas (excluding private house lot pads) as further described in Appendix A. The Proposed Project incorporates numerous features to reduce water usage, including a substantial amount of non-irrigated land area with a mix of low-intensity uses and a very efficient irrigation system with water demand requirements less than what a more typically landscaped residential community would require. The Proposed Project includes a substantial amount of non-irrigated land

area (approximately 175 acres) which will be maintained in its existing, native condition and not require any water, including during the establishment period. In addition to the native area, the Proposed Project includes approximately 56 acres of transitional manufactured slope and approximately 8 acres of meadow space, which will be irrigated to establish the low water use plant materials but will thereafter require water only on an as-needed basis during the summer months. The proposed citrus grove and agricultural vineyard will represent both a distinctive aesthetic element and a very low-intensity use of water. These areas have been designed to minimize irrigation needs and will require relatively little water (approximate 0.27 AFY; See Section 2.2). The vineyard will feature a very efficient point-source irrigation system with root bubblers on each vine. Similarly, the orange grove will feature root bubblers at each tree and no additional plant material below. The parkway areas will be irrigated with an efficient drip system and planted with low water use groundcover and street trees in an effort to further reduce demand.

The Property is currently entitled for 209 units of housing and a golf course, pursuant to 2002 approval by the County of Los Angeles of a vesting tentative tract map and various related entitlements (Previous Project). The approved Previous Project had a total estimated water demand of 769 AFY, proposed to be supplied through imported water sources provided by CLWA and from groundwater from the Saugus Formation, which are similar to the water supply sources for the Proposed Project.<sup>6</sup> The Proposed Project consists of a residential development of 497 dwelling units on lot sizes averaging 12,500 square feet. Amenities for residents and the public include a community recreation center and seven privately maintained active/passive recreational lots (both controlled by a homeowner's association), a neighborhood park that could be dedicated to the County (with surrounding meadow space), 5 miles of pedestrian trails, a multi-use trail and vineyards, and accompanying infrastructure and public and private roadways. The Proposed Project utilizes the existing infrastructure and grading work of

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<sup>6</sup> According to the August 2002 Addendum to the Final Impact Report (Addendum) for the Previous Project, at the time of the Previous Project approval, it was anticipated that 189 AFY of potable water would be provided by LACWWD36, with the remainder (580 AF), to be used for landscaping, pumped from the Saugus Formation from a privately owned well on the Property. (See Addendum). No distinction is made in the Addendum between normal and dry year demands.

the Previous Project to the maximum extent feasible. The Proposed Project is designed at a density of approximately 1.2 dwelling units per gross acre.

As discussed in Section 2.2, the total projected water demand for the Proposed Project, including residential, community recreation center and landscaping use, during normal year scenarios is 593 AFY, or 176 AFY less than the water demand approved for the Previous Project in 2002. During single and multiple dry year scenarios, the total water demand for the Proposed Project is estimated to increase to 666 AFY (or 103 AFY less than approved for the Previous Project), based on the proportionate increases in local water use from normal year water demands to single and multiple dry year water demands within CLWA's service area as presented in CLWA's 2010 UWMP. In addition, while the golf course and other landscaping in the Previous Project required 3.3 AFY of water per acre, the proposed irrigated areas for the Proposed Project require only 1.4 AFY of water per acre.

The water demands for the Proposed Project were estimated using a residential water use demand factor provided by LACWWD36 of approximately 0.83 AFY per metered connection, which is representative of water demand factors for similar existing residential units. The residential water use demand factor appears to be conservative when compared to the current average residential water use demand factor within LACWWD36's service area of approximately 0.76 AFY per metered connection, as identified in CLWA's 2010 UWMP. The Proposed Project's water demands are anticipated to be wholly met through water provided by LACWWD36.

The purpose of this Assessment is to evaluate and confirm LACWWD36's ability to provide all public utility water service to the Proposed Project. The reliability of existing and future water supplies available to LACWWD36 is based on regional and local groundwater and surface water management goals and implementation strategies, including supplemental imported water distribution programs, groundwater banking programs, and the use of recycled water. As discussed further in Section 1.2, this Assessment was prepared in accordance with the California Water Code Division 6,

Part 2.10, Sections 10910-10915 (Water Supply Planning to Support Existing and Planned Future Use) and Government Code 66473 (Water Supply Verification) and evaluates LACWWD36's available water supply sources and total projected water demands, including the water demands of the Proposed Project, in addition to existing and planned future uses (including relevant agricultural and manufacturing uses) through the year 2040.

### **1.1 LACWWD36 Service Area**

LACWWD36 is a special district formed in 1963 pursuant to Division 16, County Waterworks District of the California Water Code. LACWWD36 provides water service to approximately 12 square miles within the Santa Clarita Valley, including the Hasley Canyon area and the unincorporated community of Val Verde (See Figure 1).

LACWWD36 is operated by the Los Angeles County Department of Public Works (LACDPW) and is governed by the Los Angeles County Board of Supervisors. As of 2013, LACWWD36 served approximately 4,700 people through approximately 1,350 metered connections<sup>7</sup>. LACWWD36 primarily obtains water supplies through purchase of imported water from CLWA and from a new 2,800 gallon per minute (gpm) well provided by the Applicant in January 2012 that produces groundwater from the Saugus Formation. A further discussion of LACWWD36's existing and projected sources of water supplies is provided in Section 3.0.

### **1.2 Water Supply Planning Provisions**

Population growth in the State of California has resulted in additional water demand on water systems. The State legislature has enacted laws to ensure that the increased water demands are adequately addressed and that a firm source of water supply is available prior to approval of certain new developments. The regulations include

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<sup>7</sup> Number of connections based on Los Angeles County Waterworks District website as of March 31, 2013

California Water Code Division 6, Part 2.10, Sections 10910-10915 (Water Supply Planning to Support Existing and Planned Future Use) and Government Code 66473.7, which are briefly described below. The provisions of the California Water Code and the Government Code seek to promote more collaborative planning between local water suppliers and cities and counties and require detailed information regarding water availability to be provided to city and county land use planners prior to approval of certain specified land use development projects.

This Water Supply Assessment was prepared pursuant to the requirements of the California Water Code and the Government Code and confirms that LACWWD36 has sufficient water supplies to meet the projected demands of the Proposed Project, in addition to existing and planned future uses. The Urban Water Management Plan (UWMP) is a foundational document for compliance with the California Water Code and the Government Code. The provisions of the California Water Code and the Government Code repeatedly identify the UWMP as a planning document that can be used by a water supplier to meet the standards set forth in both statutes. California Environmental Quality Act (CEQA) guidelines (Title 14, California Code of Regulations, Chapter 3, Article 7, Section 15083.5) contain similar provisions regarding consultation with water agencies for certain projects.

CLWA's 2010 UWMP (June 2011), prepared pursuant to California Water Code Division 6, Part 2.55, Section 10608 (Sustainable Water Use and Demand Reduction) and California Water Code Division 6, Part 2.6, Sections 10608-10656 (Urban Water Management Planning), describes future water demands and future availability of the water supply sources used by retail water agencies operating within CLWA's service area, including LACWWD36, Newhall County Water District (NCWD), Santa Clarita Water Division of CLWA (SCWD), and Valencia Water Company (VWC). Although LACWWD36 was not required by the California Water Code and Government Code to prepare an UWMP (and therefore participated as a cooperating agency in the CLWA 2010 UWMP), LACWWD36's current and projected future water demands and supplies



were identified in CLWA's 2010 UWMP based on LACWWD36's input. CLWA's 2010 UWMP was used together with additional information subsequently identified by LACWWD36 to prepare this Water Supply Assessment.

#### **1.2.1 California Water Code (Sections 10910-10915)**

Existing law requires every urban water supplier to identify, as part of its UWMP, the existing and planned sources of water available to the supplier. California Water Code Division 6, Part 2.10, Sections 10910-10915 requires an urban water supplier to include in its UWMP a description of all water supply projects and programs that may be undertaken to meet total projected water use over the next 20 years. If the water demands for the proposed developments have been accounted for in a recently adopted urban water management plan, the water supplier may incorporate information contained in that plan to satisfy certain requirements of a water supply assessment. The California Water Code requires the assessment to include, along with other information, an identification of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the Proposed Project and the quantities of water received in prior years pursuant to those entitlements, rights, and contracts. The California Water Code also requires the public water system, or the city or county, as applicable, to submit its plans for acquiring additional water supplies if that entity concludes that water supplies are, or will be, insufficient.

#### **1.2.2 Government Code 66473.7**

Government Code 66473.7 requires written verification that a sufficient water supply is available as a condition to approval of certain tract maps. Sufficient water supply is the total water supply available during normal, single-dry, and multiple-dry years within a 20-year projection that will meet the projected demand of the Proposed Project, in addition to existing and planned future uses.

### **1.2.3 Consistency with City and County Planning Efforts**

The CLWA's 2010 UWMP analyzed the consistency of the growth projections made by the water suppliers with the growth discussed in the One Valley One Vision Area Plan (OVOV), a joint planning effort by the City of Santa Clarita and Los Angeles County representing the build-out of the entire Santa Clarita Valley. OVOV was adopted by the County of Los Angeles as a community plan component of the County General Plan following approval of the CLWA's 2010 UWMP. OVOV is the governing community plan for the Property and the Proposed Project is consistent with the urban land use designation for the Property in OVOV.

The CLWA's 2010 UWMP noted that the overwhelming majority of the OVOV population is located in the CLWA service area, making it appropriate to compare the CLWA service area population projections to the OVOV projections.

*"The OVOV projections and SCAG projections indicate a 1.6 to 1.8 percent annual growth rate of population for the Santa Clarita Valley. The purveyor projections of population growth are just slightly below that with a 1.5 percent annual growth rate. These population growth rates align with the annual rate of increase in the purveyors' projected water demands of 1.8 percent. Based on a detailed analysis of the OVOV Planning Area conducted by traffic analysis zones, County and City staff have determined that population of the Santa Clarita Valley at full build-out of the uses shown on the land use map of the Area Plan will be approximately 460,000 to 482,000 residents. County staff has also provided updated and adjusted 2010 and 2035 population projections using SCAG data for the unincorporated areas of CLWA's service area (using year 2000 Census base data). Based on these projections for the unincorporated area and SCAG's projections for the City, projections for the Santa Clarita Valley at full build-out are about 535,700 persons. The total population projected in this UWMP for the CLWA service area in 2050 is approximately 512,000 residents. The difference between this and OVOV projections may be due to some purveyors' master planning efforts taking a more conservative approach to ensure an adequate supply of water for all future uses."*

CLWA's 2010 UWMP, p. 2-14.

CLWA's 2010 UWMP projects overall population growth within its service area will grow approximately 1.5 to 1.6 percent annually over the next 25 to 50 years, similar to the population growth projections from OVOV and SCAG.<sup>8</sup>

As the Proposed Project is consistent with the land use designation for the Property in the OVOV (and is at lower density than permitted by OVOV and existing zoning), the reliability of water supplies for the Proposed Project discussed in this Assessment is consistent with the reliability of water supplies discussed in the One Valley One Vision Revised Draft Program Environmental Impact Report (OVOV EIR) for the Santa Clarita Valley. In adopting the OVOV EIR, the County concluded that there is adequate water to serve existing and future growth within the OVOV planning area, finding that adequate and reliable water supplies are available during normal, single-dry, and multiple-dry years to meet existing and projected water demands.

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<sup>8</sup> Although CLWA's 2010 UWMP projects population growth within LACWWD36 will increase at a greater rate than the average population growth rate within CLWA's entire service area, the overall available water supplies projected by CLWA are based on the population growth rate in CLWA's entire service area.

## **2.0 Historical and Projected Water Demands (LACWWD36)**

The following sections provide the historical and projected future water demands within LACWWD36's service area, including the Proposed Project. For the purposes of this Assessment, it is anticipated that the demand for water will begin with a demand for construction water only (approximately 40 AFY) and will increase gradually as the Proposed Project is constructed over the 5 to 7 years of anticipated buildout. It is anticipated that construction of the Proposed Project will begin in approximately 2015 and be completed within five years (i.e., by 2020). Although buildout may occur at a later date due to market conditions or other issues, this Assessment conservatively assumes the Proposed Project will commence in 2015 and that the full demand of the Proposed Project for water will occur in 2020 in order to assure that water demand at each stage of the Proposed Project can be met. This Assessment projects LACWWD36's water demands (including water demands from the Proposed Project) through the year 2040 (a period of at least 20 years).

### **2.1 Historical Water Demand**

Table 1 provides LACWWD36's historical water demands within its service area. LACWWD36's total water demands have ranged from 453 AFY to approximately 1,406 AFY, with an average demand of approximately 960 AFY.

**Table 1. LACWWD36's Historical Water Demands (AFY)**

Year	Water Demands (AFY)		
	Imported Water [1]	Groundwater [2]	Total Demands
1993	465	0	465
1994	453	0	453
1995	477	0	477
1996	533	0	533
1997	785	0	785
1998	578	0	578
1999	654	0	654
2000	800	0	800
2001	907	0	907
2002	1,069	0	1,069
2003	1,175	0	1,175
2004	854	380	1,234
2005	857	343	1,200
2006	1,289	0	1,289
2007	1,406	0	1,406
2008	1,354	0	1,354
2009	1,243	0	1,243
2010	1,141	0	1,141
2011	1,172	0	1,172
2012	471	794	1,265
Average			960

**Sources:**

"2012 Santa Clarita Valley Water Report", June 2013, Luhdorff & Scalmanini Consulting Engineers

**Notes:**

- [1] Imported water obtained from CLWA
- [2] Groundwater (Alluvium) purchased from LA County Honor Farm in 2004 and 2005. As a condition of the approved Previous Project, LACWWD36 was provided a new 2,800 gpm Saugus Formation groundwater production well in January 2012.

## **2.2 Projected Future Water Demand**

As shown in Table 2, the normal year water demand for the Proposed Project is 593 AFY. The water supplies for the Proposed Project, which include imported water provided by CLWA and groundwater from the Saugus Formation, are identical to the water supply sources as planned for the approved Previous Project. However, the quantities of the water demands met from the two water supply sources have been adjusted from the approved Previous Project to the Proposed Project.

**Table 2. Total Project Water Demands (AFY)**

<b>Use Description</b>	<b>Number of Units or Approximate Acres</b>	<b>Average Water Demand (AFY)</b>
Single Family Residential <sup>1</sup>	497	413
Ornamental Slopes <sup>2</sup>	26.2	50.1
Transitional Slopes (Non Public) <sup>2</sup>	17.1	32.8
Transitional Slopes (Manufactured) <sup>2</sup>	56.2	35.8
Citrus Grove <sup>2</sup>	4.2	0.03
Agriculture Vineyard <sup>2</sup>	9.1	0.24
Meadow Space <sup>2</sup>	8.5	5.1
Park Sites and Recreation Center <sup>2, 3</sup>	13.4	40.3
Parkway <sup>2</sup>	9.3	15.9
<b>Total</b>		<b>593</b>

**Notes:**

<sup>1</sup> Water Usage Factor of 0.83 ac-ft/unit provided by LACWWD36. The water usage factor for the single family residences is based on an average lot size of 12,500 sq. ft. which covers a total area of approximately 142 acres. The 142 acres include an area of approximately 111 acres of house lot pads and an area of approximately 31 acres of privately owned irrigated slopes. Portions of the irrigated privately owned slopes are also included in the irrigation demand estimates associated with other sloped areas in the table. As a result, the above projected water demand estimates for the Proposed Project conservatively include the privately owned slope water demands under both use descriptions.

<sup>2</sup> Irrigation demand estimates provided by Nathan Gipple at SITESCAPES, Inc. (Irrigation demands are based on area, evapotranspiration rate, plant factor, conversion factor, and irrigation efficiency.) See Appendix A.

<sup>3</sup> The estimated water demand for Park Sites irrigation, based on a total area of 13.4 acres, is approximately 40.3 AFY. However, the estimated water demand for Park Sites and Recreation Center will be less because the Recreation Center will occupy a portion of the 13.4 acres of Park sites (due to the Recreation Center water demand being less than the landscape irrigation demand for an equivalent area of Park Site land). For conservative purposes, this Assessment incorporates the higher estimated water demand for the Recreation Center area.

CLWA's 2010 UWMP provides current and projected future water demands for purveyors within its service area, including LACWWD36, for the next twenty years (and through year 2050). The projected water demands in CLWA's 2010 UWMP were calculated based on: (1) urban per capita water use targets developed pursuant to Senate Bill SBX7-7 (Water Conservation Act of 2009) which requires urban water agencies within California to achieve a 20 percent reduction in urban per capita water use by December 31, 2020; and (2) population projections. Because LACWWD36 currently serves fewer than 3,000 end users (or service connections<sup>9</sup>) and provides less than 3,000 AFY of water, LACWWD36 is not bound to the requirements of SBX7-7. However, LACWWD36 expects continued implementation of conservation programs within its service area. LACWWD36's future water demands, including conservation, projected in CLWA's 2010 UWMP are presented in this Assessment.

The projected water demands for LACWWD36 identified in CLWA's 2010 UWMP incorporate water demands for the Previous Project for the Property. CLWA's 2010 UWMP includes 251 AFY<sup>10</sup> of residential water demand for LACWWD36 for the Previous Project. The remaining 518 AFY of water demands for the Previous Project (or 769 AFY – 251 AFY) were associated with the golf course demands. The water demands for the golf course are included in projected use of the Saugus Formation aquifer by agricultural and other users and are not included in the water demands for LACWWD36 because the demand was planned to be met by a privately owned well to be built on the Previous Project Property<sup>11</sup> (See Table 3-7<sup>12</sup> of CLWA's 2010 UWMP). As a result, 342 AFY (593 AFY – 251 AFY) of projected water demands from the Proposed Project were not specifically included in LACWWD36's future water demand presented in CLWA's 2010 UWMP. Table 3 provides the projected water demands for

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<sup>9</sup> Pursuant to the California Department of Water Resources "Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan", March 2011

<sup>10</sup> Written correspondence to CLWA regarding LACWWD36 UWMP projections, as provided by Greg Even with LACWWD36 staff in January 2014.

<sup>11</sup> The 518 AFY of projected golf course water demands for the Previous Project are accounted for in the groundwater operating plan (See Section 3.2) and Table 3-7 of the CLWA 2010 UWMP.

<sup>12</sup> See footnote (b) of Table 3-7 which indicates the water demand for the proposed Palmer Golf Course, which was the name of the golf course for the Previous Project, was included in the water demands for agricultural and other users but was anticipated to be met with supplies from the Saugus Formation aquifer from a private well.

LACWWD36's service area, which includes the total demands from the Project. As described in Section 2.0 above, for purposes of this Assessment it is conservatively assumed that the Proposed Project will be completed by 2020.

**Table 3. Current and Projected LACWWD36 Water Demands (Based on UWMP) (AFY)**

Year	Water Demands (AFY)	
	(Including Partial Project Water Demands) [1]	(Including Full Project Water Demands) [2]
2012	1,265	1,265
2015	1,584	1,584
2020	1,802	2,144
2025	2,146	2,488
2030	2,489	2,831
2035	2,833	3,175
2040	3,177	3,519

**Notes:**

[1] 2012 water demands based on "2012 Santa Clarita Valley Water Report", June 2013, Luhdorff & Scalmanini Consulting Engineers. Projected water demands are based on CLWA's 2010 UWMP and include approximately 251 AFY of Proposed Project water demands beginning in 2015. Although it is not anticipated the Proposed Project will require 251 AF of water in 2015, for conservative purposes, the total water demands for LACWWD36 for 2015 as presented in CLWA's 2010 UWMP have not been reduced for this WSA.

[2] Proposed Project water demands are estimated at 593 AFY after full buildout and include water required for construction of the Proposed Project. It is anticipated Proposed Project construction will begin in 2015 and require 40 AFY for construction purposes, which is below the 251 AF of previously anticipated project water demands estimated in CLWA's 2010 UWMP. Excluding the 251 AFY of Proposed Project water demands incorporated in CLWA's 2010 UWMP, the remaining Proposed Project water demands are 342 AFY in normal years after completion of the Proposed Project.



### **3.0 Water Supply Sources**

LACWWD36 currently obtains water supplies through purchase of imported water from CLWA and through production of groundwater supplies from the Saugus Formation aquifer. Table 1 shows the historical quantities of imported water and groundwater used by LACWWD36 to meet demands.

Water supplies currently and potentially available to LACWWD36 include the following:

- LACWWD36 purchases imported water supplies from CLWA. CLWA obtains imported water supplies from the SWP, Castaic Lake, and deliveries and/or transfers from other agencies. In addition, CLWA delivers recycled water for non-potable water uses within its service area. CLWA's 2002 Draft Recycled Water Master Plan, prepared by Kennedy/Jenks Consultants in May 2002, included recycled water demands for the golf course (Hasley Canyon Golf Course) included in the approved Previous Project on the Property. CLWA is currently updating its Recycled Water Master Plan. Based on discussion with CLWA it appears the updated Recycled Water Master Plan may not include plans to provide recycled water in the vicinity of the Property due to changes in anticipated demand for recycled water in the area. To be conservative in the evaluation of water supply source available, recycled water has not been included as a future water supply source through the year 2040 for LACWWD36 in this Assessment. Use of recycled water by other agencies to meet a portion of the overall water demands within CLWA's service area, reduces overall demands for imported water supplies, which increases the imported water supplies available to LACWWD36 through CLWA.
- LACWWD36's service area overlies the Santa Clara River Valley East Groundwater Subbasin of the Santa Clara River Valley Groundwater Basin. The groundwater basin is comprised of two aquifer systems: (1) the Alluvial aquifer and (2) the Saugus Formation. LACWWD36 currently produces groundwater

from the Saugus Formation through a new 2,800 gpm well, completed by the Applicant and dedicated to LACWWD36 in 2012. The new well is projected to pump additional groundwater to meet future water demands within its service area. LACWWD36 is not anticipated to produce groundwater from the Alluvial aquifer. However, use of groundwater from the Alluvial aquifer by other agencies to meet a portion of the overall water demands within CLWA's service area, reduces overall demands for imported water supplies, which increases the imported water supplies available to LACWWD36 through CLWA.

- During calendar years 2004 and 2005, LACWWD36 purchased 380 AF and 343 AF, respectively, of water from Los Angeles County Honor Farm (from groundwater produced from the Alluvial aquifer). Although it is not anticipated LACWWD36 will continue purchasing water from Los Angeles County Honor Farm, purchasing of this water demonstrates LACWWD36 ability to purchase and use water from others.

Additional information regarding LACWWD36's existing and potential sources of water supplies, as well as a discussion regarding the reliability of these supplies, is provided below.

### **3.1 Imported Water Supplies**

As discussed previously, LACWWD36 can purchase imported water from CLWA. In addition to SWP water, CLWA has access to water from Flexible Storage Accounts in Castaic Lake, which are planned for, but are not limited to, use during dry years. CLWA also has access to deliveries of imported surface supply from the Buena Vista Water Storage District (BVWSD) and Rosedale Rio-Bravo Water Storage District (RRBWSD) in Kern County. CLWA wholesales these imported water supplies to its member agencies, including LACWWD36, NCWD, VWC, and SCWD.

According to Luhdorff and Scalmanini Consulting Engineers' (L&S) "14<sup>th</sup> Annual Santa Clarita Valley Water Report 2012" (L&S 2012 Report), dated June 2013, the total historical imported water supplies purchased by municipal purveyors and agricultural users from CLWA for the period from 1993 to 2012 has ranged from approximately 13,840 AFY to 47,205 AFY, with an average of approximately 31,840 AFY (See Table 4).

**Table 4. Total Imported Water Supplies Purchased from CLWA (AFY)**

<b>Year</b>	<b>Total Purchases from Municipal Purveyors and Other Water Users (AFY)</b>
1993	13,836
1994	14,700
1995	17,002
1996	18,873
1997	23,215
1998	20,266
1999	27,302
2000	32,582
2001	35,369
2002	41,763
2003	44,416
2004	47,205
2005	37,997
2006	40,048
2007	45,151
2008	41,705
2009	38,546
2010	30,578
2011	30,850
2012	35,442
Average	31,842

**Source:**

Luhdorff & Scalmanini "2012 Santa Clarita Valley Water Report", June 2013

### **3.1.1 SWP Water Supplies**

CLWA contracts with the State of California, through the SWP, for the delivery of northern California water through the California Aqueduct. The SWP is a water storage and delivery system maintained and operated by the California Department of Water Resources (DWR). The SWP is a statewide water conveyance system that diverts and stores water in Northern and Central California and conveys water (including conveyance through the Sacramento-San Joaquin Delta region) to 29 water agencies throughout the State. The SWP has delivered water since the 1960's through a network of aqueducts, pumping stations and power plants. The original SWP conveyance facilities completed in the 1970s have not been expanded as originally planned and are not capable of delivering the full contracted entitlement for SWP water every year.

The San Francisco Bay -Sacramento River Delta area (Bay-Delta) is a part of the SWP water delivery system. The reliability of moving water through the Bay-Delta may be impacted by potential risks associated with endangered species, earthquakes, levee failure, and climate change. In order to mitigate these potential risks, State and federal resources and environmental protection agencies and a broad range of stakeholders are involved in a multiyear planning process referred to as the CALFED process to develop programs to greatly improve the capacity and reliability of the SWP and the environmental conditions of the Bay-Delta. The Bay-Delta cooperating agencies approved a Record of Decision in August 2000 for a Programmatic Environmental Impact Report/Impact Statement for a multi-year improvement program. The improvement program includes projects related to DWR's SWP conveyance capacity, water quality, and operation of the SWP. Those programs are undergoing thorough environmental review and public input is required.

The Bay Delta Conservation Plan (BDCP) grew out of the CALFED Bay-Delta Plan's Ecosystem Restoration Program Conservation Strategy. A draft BDCP was prepared through a collaboration of state, federal, and local water agencies, state and federal fish agencies, and a broad range of stakeholders. The BDCP identifies conservation

strategies, water flow, and habitat restoration actions in California's Sacramento-San Joaquin Delta. The goal of the BDCP is to provide for both species/habitat protection and improved reliability of water supplies. The administrative draft BDCP documents are available. The Public Draft BDCP and Public Draft Environmental Impact Report / Environmental Impact Statement are expected to be released for formal public review and comment in December 2013. The BDCP is intended to meet the standards of the Sacramento-San Joaquin Delta Reform Act of 2009, described below.

In November 2009, following more than three (3) years of BDCP planning, the State of California enacted the Sacramento-San Joaquin Delta Reform Act of 2009 (California Water Code Division 35) which provided for an independent state agency, the Delta Stewardship Council. Pursuant to that act, the Delta Stewardship Council developed a comprehensive management plan that provides more reliable water supply for California and protects and enhances the Delta ecosystem (through development and implementation of a Delta Plan). The Delta Stewardship Council adopted a final Delta Plan in May 2013 which is the comprehensive long-term management plan for the Delta to improve statewide water supply reliability and to protect the Delta. The Delta Stewardship Council also adopted a Programmatic Environmental impact Report (PEIR) on the Delta Plan in May 2013. The PEIR evaluates the potential impact of the Delta Plan and identifies mitigation measures. The Delta Stewardship Council is currently facing lawsuits challenging the certification of an EIR for the Delta Plan. However, the impact of the outcome of these lawsuits cannot be reasonably determined at this time.

DWR's "State Water Project Final Delivery Reliability Report 2011" (2011 Report), dated June 2012, indicates the delivery reliability of SWP water is approximately 60 percent, on average, over the next 20 years. The DWR report incorporated future impacts on water deliveries as a result of climate change and potential limited pumping of the SWP to protect salmon, smelt, and other species in the Sacramento-San Joaquin Delta and Central Valley areas, including operational restrictions of the biological opinions issued by the U.S. Fish and Wildlife Service (USFWS) in December 2008 and the National Marine Fisheries Service (NMFS) in June 2009 governing the SWP and Central Valley

Project (a Federal water storage and conveyance facility) operations. Although litigation has ensued regarding the biological opinions relied upon by the federal government in its determination,<sup>13</sup> DWR has taken these issues into account in its 2011 Report and has not subsequently indicated that its prior analysis of SWP reliability was rendered incorrect by the outcome of this litigation.

CLWA holds a long-term contract with DWR for SWP water. CLWA purchases SWP water and is a wholesale provider to SCWD, VWC, NRWC, and LACWWD36. SWP water is delivered to CLWA through the West Branch of the California Aqueduct. SWP water is treated, filtered, and disinfected at CLWA's Earl Schmidt Filtration Plant and Rio Vista Water Treatment Plant. CLWA provides treated SWP water through connections with each of the four purveyors.

CLWA currently has a contractual 'Table A' amount of 95,200 AFY of SWP water ('Table A' represents the maximum amount a contractor may request and is used to determine the contractor's proportional share of the available SWP water allocated and delivered to each SWP contractor. DWR determines the total amount of Table A water to be delivered on an annual basis based on contractor demands and projected available water supplies). CLWA's original Table A contract for 23,000 AF of SWP water was signed in 1960 and was later increased to 41,500 AF. In 1988, CLWA purchased an additional 12,700 AF of Table A water from Devil's Den Water District. In 1999, CLWA purchased an additional 41,000 AF of Table A water from Kern County Water Agency (KCWA) and Wheeler Ridge-Maricopa Water Storage District (WRMWS), for a current total of 95,200 AFY.

As discussed previously, DWR's 2011 Report indicates the delivery reliability of SWP water is approximately 60 percent, on average, over the next 20 years. Additional SWP

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<sup>13</sup> In *San Luis & Delta-Mendota Water Authority, et al v. Sally Jewell et al* (2014) DJDAR 3151, the 9<sup>th</sup> Circuit Court of Appeals upheld the biological opinions upon which the federal government had relied in imposing operational restrictions on pumping from the Delta, but required the Bureau of Reclamation to undertake NEPA review in conjunction with its adoption and implementation of the biological opinion. The matter was remanded to the District Court for further proceedings consistent with this ruling.

‘Article 21’ water (or water that SWP contractors may receive on a short-term basis, when available during wet months, in addition to their Table A water) may also be available during wet hydrologic periods on the SWP watershed. During periods of less SWP availability, water supplies to meet demands within CLWA’s service area be can obtained through increased use of Flexible Storage Account, groundwater pumping, and banking programs. These additional water supply sources are discussed below.

CLWA’s 2010 UWMP projects total SWP water supplies available to CLWA will range from 57,400 to 58,100 AFY, from 2015 to 2040, during normal years. In addition, total SWP water supplies available to CLWA, from 2015 to 2040, are projected to range from 9,100 to 11,900 AFY, during single dry years, and from 32,900 to 33,000 AFY, during multiple dry years. SWP water supplies projected in CLWA’s 2010 UWMP are based on DWR’s “State Water Project Delivery Reliability Report 2009” (2009 Report), dated August 2010. The future delivery reliability of SWP water projected in DWR’s 2009 Report is similar to the future delivery reliability of SWP water projected in DWR’s 2011 Report. For example, the long-term average reliability of SWP water deliveries is projected at approximately 60 percent in both the DWR’s 2009 Report and DWR’s 2011 Report.

The final SWP allocation for calendar year 2013 was 35 percent of requested water amounts. In addition, the final allocation was 65 percent in 2012 and 80 percent in 2011. Due to on-going drought conditions at the time this Assessment was prepared, , DWR established the 2014 SWP allocations at five (5) percent in April 2014, however, water agencies will not be able to access the water until after September 2014. DWR has typically released final allocation amounts for SWP water between February and June in recent years. I. In response to DWR’s January 2014 announcement that they were not anticipating any SWP deliveries in 2014, the Santa Clarita Valley Water Committee, whose members represent CLWA, the City of Santa Clarita, Los Angeles County and all four local water retail purveyors, adopted water conservation measures consistent with the region’s water conservation practices during February 2014. CLWA has indicated that as a result of advance water supply planning and a diverse portfolio of water

supplies, severe water use restrictions will not be necessary. CLWA's 2010 UWMP includes water shortage contingency planning (based on a Water Shortage Contingency Plan and a Drought Emergency Water Sharing Agreement prepared by CLWA and the retail purveyors) in the event local and regional water supplies are interrupted or reduced significantly as a result of droughts, earthquakes, and other disasters. CLWA and the retail water purveyors have developed various strategies in response to these potential emergencies, including four-stage rationing and demand reduction goals, mandatory prohibitions, and penalties for excessive use.

LACWWD36 currently receives imported water supplies through an existing pipeline that consists of 8-inch, 10-inch, and 12-inch diameter portions from its 6-inch connection with CLWA with a rated capacity of approximately 3,500 gpm. LACWWD36 has indicated that the Proposed Project would be required to install approximately 5,500 feet of new 16-inch diameter pipeline from an unused CLWA supply turnout to the existing 16-inch pipeline along Hasley Canyon Road, along with an associated new booster pump station, to supplement the District's capacity to deliver imported water supplies to the Property and other portions of LACWWD36's service area<sup>14</sup>. The upgraded pipeline will allow LACWWD36 to physically receive an additional amount of at least 800 AFY of imported water supplies. A portion of the increased water supply would be intended to make CLWA water available to the Proposed Project, which would allow LACWWD36 the ability to lessen its reliance on groundwater for the Proposed Project. The increase in the water main would also increase LACWWD36's ability to serve additional users. Based on the availability of SWP water as shown in CLWA's 2010 UWMP, an additional supply of 800 AFY of SWP water will be available to LACWW36 during normal, single dry, and multiple dry years when the upgraded pipeline capacity is completed. It is anticipated the upgraded pipeline will be installed prior to water deliveries to the Project. A summary of SWP water supplies available to LACWWD36, through CLWA, is provided in Section 4.0.

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<sup>14</sup> Construction of a new larger pipeline will allow LACWWD36 to meet its projected water needs from stored water and State Water Project water, which could assist in reducing LACWWD36's reliance on groundwater. The construction of this new larger pipeline would allow LACWWD36 to gain access to water that CLWA already has, but that was previously not available to LACWWD36 due to pipeline capacity issues.



### **3.1.2 Flexible Storage Accounts**

As part of its water supply contract with DWR, CLWA has access to a portion of the Castaic Lake's storage capacity, referred to as a Flexible Storage Account. The Flexible Storage Account allows CLWA to utilize up to 4,684 AF of the storage in Castaic Lake. CLWA is required to replace any amount withdrawn from Castaic Lake within five years. CLWA manages the Flexible Storage Account by replenishing/storing surplus SWP water into Castaic Lake, when available during normal and wet years, for use during dry years when SWP water is less available. In 2005, CLWA entered into an agreement with SWP contractor agencies in Ventura County for use of their Flexible Storage Account. These Flexible Storage Accounts allow CLWA access to an additional 1,376 AF of storage in Castaic Lake through the year 2015. Although it is anticipated the agreement for access to additional Flexible Storage Accounts will be extended beyond the 2015 term, CLWA's 2010 UWMP does not assume the additional Flexible Storage Accounts will be available beyond the year 2015.

CLWA's 2010 UWMP projects the water supplies from the Flexible Storage Accounts will not be required during normal years through the year 2040. CLWA's total water supplies from the Flexible Storage Accounts, from 2015 to 2040, are projected to range from 4,679 to 6,060 AFY, during single dry years, and from 1,170 to 1,510 AFY, during multiple dry years. As discussed previously, CLWA's 2010 UWMP projects a maximum amount of 4,684 AF will be available from the Flexible Storage Accounts after 2015. A summary of water supplies available to LACWWD36 from the Flexible Storage Accounts, through CLWA, is provided in Section 4.0.

### **3.1.3 Transfer Agreements**

In 2007, CLWA entered into a long-term transfer agreement (2007 Water Acquisition Agreement) with BVWSD and RRBWSD in Kern County for up to 11,000 AFY of water. Both BVWSD and RRBWSD are member agencies of the Kern County Water Agency (KCWA), a SWP contractor, and each agency has a contract with KCWA for SWP Table A amounts. BVWSD and RRBWSD have jointly developed a program that provides a firm water supply (available in all water year types) and a water banking component. The firm water supply amount of 11,000 AFY is based on BVWSD's long-standing water rights to the Kern River. Under the transfer agreement, water from the Kern River is captured and stored as groundwater within BVWSD's service area. CLWA receives water under the transfer agreement through: (1) exchange of BVWSD's and RRBWSD's SWP Table A supplies or (2) direct delivery of Kern River water to the California Aqueduct via the Cross Valley Canal.

CLWA's 2010 UWMP projects the water supplies from the transfer agreement with BVWSD and RRBWSD will be 11,000 AFY during normal, single dry, and multiple dry years through the year 2040. A summary of water supplies available to LACWWD36 from the transfer agreement, through CLWA, is provided in Section 4.0.

### **3.2 Groundwater Supplies**

According to the DWR's, "California's Groundwater, Bulletin 118" dated January 2006, the groundwater basin that underlies CLWA's service area is the Santa Clara River Valley East Groundwater Subbasin (East Subbasin) of the Santa Clara River Valley Groundwater Basin. The East Subbasin covers approximately 66,200 acres. According to CLWA's 2010 UWMP, the East Subbasin is comprised of two aquifer systems: (1) the Alluvium (or Alluvial aquifer) and (2) the Saugus Formation. The locations of these two aquifer systems are provided in Figure 2. The Alluvial aquifer and the Saugus Formation are not adjudicated and have not been identified as in overdraft or projected to be in overdraft by DWR in California's Groundwater, Bulletin 118. LACWWD36 can

exercise its appropriative rights to produce groundwater from the East Subbasin. There is no statutory procedure to establish the right to pump groundwater in California. In a basin that is not in overdraft, such as the East Subbasin, groundwater can be appropriated by producing groundwater and putting it to beneficial use. A further discussion of available groundwater supplies is provided below.

CLWA was required through Assembly Bill (AB) 134 (2001) to prepare a Groundwater Management Plan (GWMP) in accordance with the provisions of California Water Code Section 10753 ("Groundwater Management Plans). CLWA's GWMP, prepared by L&S, was adopted in 2003 and discusses and formalizes existing groundwater supply and water resource planning and management activities within CLWA's service area. CLWA's GWMP also includes a basin-wide monitoring program which provides data for annual reporting on East Subbasin groundwater supplies, water resources, and water supply yields.

The GWMP includes the following management objectives for the East Subbasin:

- Development of an integrated surface water, groundwater, and recycled water supply to meet existing and projected municipal, agricultural, and other water demands
- Assessment of groundwater basin conditions to determine operational yields incorporating local groundwater conjunctively with supplemental imported water supplies and recycled water to avoid groundwater overdraft
- Preservation of groundwater quality, including characterization and resolution of any groundwater contamination problems
- Preservation of interrelated surface water resources, including maintenance of surface water flows and non-degradation of surface water quality, resulting from groundwater management

Management of the existing groundwater supplies within CLWA's service area is based on an operating yield concept with ranges of annual pumping volumes to capture year to year fluctuations in both hydrologic conditions and water demands. The groundwater operating plan for the East Subbasin, discussed in the annual Santa Clarita Valley Water Reports, utilizes the operating yield concept. The groundwater operating plan for the East Subbasin was developed and analyzed over the last 25 years using historical groundwater data and modeling analyses to meet water requirements (municipal, agricultural, small domestic) while maintaining the East Subbasin in a sustainable condition (i.e. no long-term depletion of groundwater or interrelated surface water). The groundwater operating plan also addressed groundwater contamination issues in the East Subbasin. Although pumping can vary from year to year, the groundwater operating plan is based on the concept that increases in groundwater use during dry periods and increases in recharge during wet periods assure that the East Subbasin is adequately replenished over the long term. The GWMP, adopted in 2003, formalized the groundwater operating yield concept.

The implementation of the GWMP includes on-going preparation of an annual "Santa Clarita Valley Water Report" which provides information regarding water requirements and water supplies within the Santa Clarita Valley. In addition, an updated analysis of the East Subbasin was prepared in August 2009 ("Analysis of Groundwater Supplies and Groundwater Basin Yield, Upper Santa Clara River Groundwater Basin, East Subbasin," prepared by L&S and GSI Water Solutions, Inc.). The analysis presented the results of modeling the groundwater operating plan, including treatment of contaminated groundwater for municipal supply. The modeling analysis concluded the groundwater operating plan is sustainable and will not cause detrimental short or long term effects to the groundwater and surface water resources in the Santa Clarita Valley.

According to CLWA's 2010 UWMP, the existing groundwater operating plan indicates the following:

- Alluvial Aquifer: Pumping from the Alluvial aquifer is governed by local hydrologic conditions in the eastern Santa Clara River watershed. Pumping can range between 30,000 and 40,000 AFY during normal years. Due to hydrogeologic constraints in the eastern part of the Basin, pumping can range between 30,000 and 35,000 AFY during locally dry years.
- Saugus Formation: Pumping from the Saugus Formation is based on the availability of other water supplies, particularly from imported water supplies. During normal year conditions, Saugus Formation pumping ranges between 7,500 and 15,000 AFY. Planned dry-year pumping from the Saugus Formation ranges between 15,000 and 25,000 AFY. Pumping can increase to between 21,000 and 25,000 AFY if imported water deliveries are reduced for two consecutive years. Pumping can increase to between 21,000 and 35,000 AFY if imported water deliveries are reduced for three consecutive years. The increase in pumping, during dry years, would be followed by periods of reduced pumping, during normal years, to further enhance the effectiveness of natural recharge processes that recover water levels and groundwater storage volumes.

The Sustainable Groundwater Management Act, adopted in 2014, requires un-adjudicated groundwater basins designated as either Medium or High Priority to adopt a Groundwater Sustainability Plan by January 31, 2022. The Project overlies the Santa Clara River Valley East Groundwater Subbasin of the Santa Clara River Valley Groundwater Basin, which has been given a priority designation of “High”; consequently, the basin will be subject to the requirements of the Sustainable Groundwater Management Act. A primary objective of the Groundwater Sustainability Plan will be to establish management practices for the use of groundwater without causing undesirable results as defined by the legislation as chronic lowering of groundwater levels, reduction of groundwater storage, seawater intrusion, degradation of quality, land subsidence, and the depletion of interconnected surface waters. Groundwater producers in the East Subbasin currently operate groundwater extractions in accordance with CLWA’s GWMP which establishes a Basin Yield for the Alluvial

aquifer and the Saugus Formation based on long-term sustainable yields. The GWMP currently incorporates the following water resources planning and management activities: groundwater level monitoring, water quality monitoring, groundwater production monitoring, subsidence monitoring, safe yield establishment, salinity management, water supply evaluation, conjunctive use operations, and groundwater contamination identification. These plan elements are consistent with those required to be addressed in the Groundwater Sustainability Plan; therefore, the implementation of a Groundwater Sustainability Plan is not anticipated to significantly change the use of groundwater as described in the GWMP and CLWA's 2010 UWMP.

### **3.2.1 Alluvial Aquifer**

The Alluvial aquifer, which generally underlies the Santa Clara River and its tributaries to maximum depths of about 200 feet, covers approximately 16,000 acres. The Alluvial aquifer is comprised of interlayered and interfingered beds of gravel, sand, silt, and clay, with variable amounts of cobbles and boulders. According to DWR's Bulletin 118, the Alluvial aquifer has a groundwater storage capacity of approximately 201,000 AF.

As discussed previously, based on historical operations and groundwater modeling analyses, the estimated long-term sustainable yield of the Alluvial aquifer ranges from 30,000 to 40,000 AFY during normal years. During dry years, the estimated yield ranges from approximately 30,000 to 35,000 AFY.

The estimated yields include approximately 15,000 AFY of pumping from the Alluvial aquifer for current agricultural and other non-municipal water uses. It is anticipated the amount of pumping from the Alluvial aquifer for agricultural water supplies will decrease in the future, with an equivalent increase for municipal water supplies. The overall pumping from the Alluvial aquifer is intended to remain within the range of long-term sustainable yields.

Currently, NCWD, SCWD, and VWC produce groundwater from the Alluvial aquifer for municipal water supply. CLWA's 2010 UWMP estimates the total Alluvial aquifer pumping capacity of these three purveyors is approximately 42,000 gpm, or a full time capacity of approximately 67,000 AFY. Although the total capacity exceeds the range of long-term sustainable yields of the Alluvial aquifer, higher pumping capacities are intended to meet daily fluctuations within a water system resulting from maximum day and peak hour system demands.

According to the "2012 Santa Clarita Valley Water Report" (2012 L&S Report), dated June 2013, the total historical groundwater production from all users in the Alluvial aquifer has averaged approximately 38,200 AFY (See Table 5).

**Table 5. Historical Alluvial Aquifer Production (Municipal, Agricultural, and Other)**

<b>Year</b>	<b>Production (AFY)</b>
1993	30,126
1994	33,133
1995	34,464
1996	38,438
1997	39,599
1998	36,648
1999	43,406
2000	39,937
2001	37,589
2002	38,276
2003	33,599
2004	33,757
2005	38,648
2006	43,061
2007	38,773
2008	41,716
2009	39,986
2010	41,159
2011	40,748
2012	40,701
Average	38,188

**Source:**

Luhdorff & Scalmanini "2012 Santa Clarita Valley Water Report", June 2013

According to CLWA's 2010 UWMP, and consistent with the groundwater operating plan, the total groundwater production from the Alluvial aquifer by all users is projected to range from 38,100 AFY to 38,500 AFY, from 2015 to 2040, during normal years. Total groundwater production from the Alluvial aquifer is projected at approximately 34,850 AFY from 2015 to 2040, during dry years.

Although LACWWD36 does not anticipate producing groundwater from the Alluvial aquifer, it is projected that water supplies from the Alluvial aquifer will continue to be



produced by other agencies. Use of groundwater from the Alluvial aquifer by other agencies to meet a portion of the overall water demands within CLWA's service area, reduces other agencies' demands for imported water supplies, which increases imported water supplies available to LACWWD36 through CLWA. A further discussion of water supplies from the Alluvial aquifer available to CLWA is provided in Section 4.0.

### **3.2.2 Saugus Formation**

The Saugus Formation is a deep groundwater aquifer underlying the Alluvial aquifer with an area of approximately 55,500 acres. The Saugus Formation can be subdivided into two stratigraphic units. The upper portion of the Saugus Formation is up to 5,000 feet thick and consists of coarse-grained sand and gravel beds that form potential aquifer units. The lower portion of the Saugus Formation, known as the Sunshine Ranch Member, does not contain sufficient groundwater for municipal-supply purposes due to low permeability of fine-grained sediments. According to DWR's Bulletin 118, the Saugus Formation has a groundwater storage capacity of approximately 1.65 million AF.

Natural recharge to the Saugus Formation occurs in unconfined areas of the aquifer through deep percolation of rainfall and leakage from overlying portions of the Alluvial aquifer. Other recharge sources to the Saugus Formation include deep percolation of agricultural and landscape irrigation water.

As previously discussed, under the groundwater operating plan for the Saugus Formation, which is based on historical operations and groundwater modeling analysis, the Saugus Formation can supply water on a long-term sustainable basis in amounts ranging from 7,500 AFY to 15,000 AFY, during normal years, with intermittent increases to 25,000 AFY to 35,000 AFY during dry years. Short-term increases in production during dry-years would be followed by replenishment of aquifer storage during subsequent normal and wet periods when pumping is reduced.

Currently, LACWWD36, NCWD, SCWD, and VWC produce groundwater from the Saugus Formation for municipal water supply. CLWA's 2010 UWMP estimates the total Saugus Formation pumping capacity from NCWD, SCWD, and VWC is approximately 17,000 gpm, or a full time capacity of approximately 27,000 AFY. LACWWD36 completed construction of a new 2,800 gpm Saugus Formation groundwater production well in January 2012. Assuming a 40 percent operating factor (based on operations of approximately 18 hours per day for half of the year), the estimated production capacity from the new well is approximately 1,800 AFY. The total pumping capacity from the existing wells exceeds the planned production range from the Saugus Formation of 7,500 AFY to 15,000 AFY during normal years as described in the groundwater operating plan. Although the current capacity is sufficient in meeting current water demands (in combination with other sources), CLWA's 2010 UWMP projects up to 35,000 AFY of total water production from the Saugus Formation in the future during dry years. The existing well capacity would allow pumping above the normal year yield of 7,500 AFY to 15,000 AFY in a dry year, however, future construction of additional wells may be necessary to meet the projected use of up to 35,000 AFY of groundwater from the Saugus Formation during dry year periods through 2040. VWC currently owns several groundwater production wells which utilize treatment technology to remove perchlorate contamination from the Saugus Formation. Installation of new groundwater wells which incorporate similar treatment to remove perchlorate contamination from Saugus Formation groundwater can result in additional groundwater production capacity. LACWWD36's new Saugus Formation groundwater production well is not expected to be affected by perchlorate contamination.

According to the 2012 L&S Report, the total historical groundwater production from all users in the Saugus Formation has ranged from approximately 3,700 AFY to 12,000 AFY, with an average of approximately 7,100 AFY (See Table 6).

**Table 6. Historical Saugus Formation Production (Municipal, Agricultural, and Other)**

<b>Year</b>	<b>Production (AFY)</b>
1993	10,610
1994	12,025
1995	8,560
1996	8,186
1997	7,745
1998	5,555
1999	3,716
2000	4,080
2001	4,140
2002	5,160
2003	4,207
2004	6,503
2005	6,453
2006	7,312
2007	7,685
2008	6,918
2009	7,678
2010	8,092
2011	8,273
2012	8,719
Average	7,081

**Source:**

Luhdorff & Scalmanini "2012 Santa Clarita Valley Water Report", June 2013

**Note:**

2011 and 2012 production includes Saugus Formation groundwater produced and treated by CLWA to remove perchlorate contamination

According to CLWA's 2010 UWMP, the total groundwater production from the Saugus Formation by all users is projected to range from 11,500 to 12,500 AFY, from 2015 to 2040, during normal years. In addition, total groundwater production from the Saugus

Formation is projected to range from 25,000 to 35,000 AFY, during single dry years, and from 25,225 to 32,550 AFY, during multiple dry years.

CLWA's 2010 UWMP projected water supplies of up to 500 AFY, by the year 2015, and up to 1,000 AFY, by the year 2040, available from the Saugus Formation to LACWWD36 during dry years. CLWA's 2010 UWMP indicated LACWWD36 would install a groundwater well which would allow LACWWD36 to produce groundwater from the Saugus Formation. As discussed previously, as a condition of the approved Previous Project, LACWWD36 was provided a new Saugus Formation groundwater production well in January 2012 with an estimated production capacity of approximately 1,800 AFY. The capacity of the well allows LACWWD36 to produce the water supply quantities from the Saugus Formation of up to 1,000 AFY by the year 2040 projected in CLWA's 2010 UWMP, consistent with the groundwater operating plan and the adopted GWMP discussed above. A summary of water supplies from the Saugus Formation available to LACWWD36 is provided in Section 4.0.

### **3.3 Other Water Supplies from CLWA**

A majority of the water demands in the Santa Clarita Valley are met through groundwater and imported SWP surface water and other imported water. Supplemental sources of water supply, including recycled water and water obtained through groundwater banking programs, enhance the reliability of CLWA's total water supplies in meeting overall water demands. These additional supplies are discussed below.

#### **3.3.1 Recycled Water Supplies**

CLWA has been supplying recycled water to customers for non-potable irrigation uses since 2003. Recycled water users within CLWA's service area include a golf course, roadway median strips, and other non-potable uses. CLWA obtains recycled water

supply from two water reclamation plants (WRPs) operated by the Santa Clarita Valley Sanitation District (the Valencia WRP and the Saugus WRP). Use of recycled water allows purveyors within CLWA's service area to reduce the amount of imported water and groundwater supplies needed to meet overall water demands. According to the 2012 L&S Report, recycled water deliveries within CLWA's service area over the past 10 years has ranged from 50 to 470 AFY, with an average of approximately 340 AFY (See Table 7).

**Table 7. Recycled Water Deliveries within CLWA's Service Area**

<b>Year</b>	<b>Total Purchases (AFY)</b>
2003	50
2004	420
2005	418
2006	419
2007	470
2008	311
2009	328
2010	336
2011	373
2012	301
Average	343

**Source:**

Luhdorff & Scalmanini "2012 Santa Clarita Valley Water Report", June 2013

In 1993, CLWA prepared a draft Reclaimed Water System Master Plan to deliver recycled water in the Santa Clarita Valley. Phase I of the plan was completed and CLWA began delivering recycled water in 2003. Phase I is expected to deliver up to 1,700 AFY of recycled water. The draft EIR for the Previous Project did not include use of recycled water for the project, however, in response to comments provided by CLWA on the draft EIR, the Final EIR for the Previous Project, dated November 2001, indicates the Project Conditions of Approval require a recycled water distribution system for the

project to be installed for use when LACWWD 36 makes recycled water available to the Previous Project site. As discussed previously, in 2002, CLWA prepared an updated Draft Recycled Water Master Plan which included up to 450 AFY of recycled water demands for the golf course (Hasley Canyon Golf Course) included in the approved Previous Project on the Property. Despite CLWA's 2002 Recycled Water Master Plan indicating an expected recycled water demand of up to 450 AFY, CLWA's 2010 UWMP projects deliveries of up to 50 AFY of recycled water to LACWWD36's service area during normal, single, and multiple dry years.

CLWA is currently updating its Recycled Water Master Plan. Based on discussion with CLWA it appears the Recycled Water Master Plan may recommend a recycled water system that will be smaller than that envisioned in the 2002 Recycled Water Master Plan. Plans to provide recycled water within LACWWD36's service area, including in the vicinity of the Property, are uncertain, due to changes in anticipated costs for a recycled water system of the size envisioned in the 2002 Recycled Water Master Plan. Because there is no recycled water supply in the vicinity of the Proposed Project and CLWA's updated Recycled Water Master Plan may not include providing recycled water in the Project area, recycled water has not been included as a future water supply source through the year 2040 for LACWWD36 in this Assessment. According to CLWA's 2010 UWMP, CLWA is projected to deliver up to a total of 22,800 AFY of recycled water within its service area to golf courses, landscaping, and other non-potable uses by the year 2050. Recycled water may not be available for use in certain portions of CLWA's service area, including potentially the Property. However, use of recycled water by other purveyors will reduce their need for potable water supplies (including groundwater and imported water supplies) which can be used in other areas of CLWA's service area, including at the Property, where recycled water may not be accessible.

### **3.3.2 Groundwater Banking Programs**

Groundwater banking programs involve storing available SWP water supplies during wet years into groundwater basins. Water supplies can be stored directly through surface spreading or injection. Water supplies can also be stored indirectly by supplying available surface water to farmers for direct agricultural applications in-lieu of their pumping groundwater. During dry years, the stored groundwater is delivered to CLWA, via the California Aqueduct, or used by farmers in exchange for their surface water allocations. CLWA currently participates in groundwater banking programs, including the Semitropic Banking Program and the RRBWSD Banking Program.

Semitropic Water Storage District (Semitropic), located in the San Joaquin Valley in the northern part of Kern County, provides SWP water to farmers for agricultural uses. Semitropic's groundwater banking program includes approximately one million AF of available groundwater storage in which water can be stored during wet years. During dry years, Semitropic delivers its SWP water supplies, through the California Aqueduct, to its banking partners (including CLWA), and uses the stored groundwater to locally supply water to farmers. Beginning in 2002, CLWA entered into storage agreements with Semitropic allowing CLWA to recover up to 90 percent of any water stored through 2013. In April 2010, CLWA entered into an agreement with Semitropic extending the existing storage agreements by 10 years. As of 2012, the amount of banked water available to CLWA through Semitropic's groundwater banking program was 45,920 AF.

RRBWSD, also located in Kern County, developed a groundwater banking program (Water Banking and Exchange Program). In 2005, CLWA and RRBWSD entered into a long-term storage agreement which provides CLWA with a storage capacity of 100,000 AF and a withdrawal capacity of 20,000 AFY. As of 2012, the amount of banked water available to CLWA through RRBWSD's groundwater banking program was 100,000 AF.

Groundwater banking programs enhance the reliability of CLWA's water supplies during dry years, when SWP water deliveries are subject to reduction. CLWA's 2010 UWMP does not project any use of banked groundwater supplies during normal years. During dry years, CLWA is projected to receive up to 15,000 AFY and 20,000 AFY of banked groundwater from the Semitropic and RRBWSD groundwater banking programs, respectively. A summary of these water supplies available to LACWWD36, through CLWA, is provided in Section 4.0.



## **4.0 Projected Water Supplies and Demands**

LACWWD36's sources of water supply are imported water purchased from CLWA and groundwater produced from the Saugus Formation.

### **4.1 CLWA Water Supplies**

LACWWD36 purchases imported water supplies from CLWA. As discussed in Section 3.1, CLWA obtains imported water supplies from the SWP, Flexible Storage Accounts in Castaic Lake, and water transfers from BVWSD and RRBWSD (based on water rights to the Kern River). CLWA also provides supplemental sources of water supplies, including recycled water and water obtained through groundwater banking programs, which enhance the reliability of CLWA's water supplies in meeting overall water demands.

LACWWD36 currently receives imported water supplies through an existing pipeline that consists of 8-inch, 10-inch, and 12-inch diameter portions from its 6-inch connection with CLWA with a rated capacity of approximately 3,500 gpm. As discussed in Section 3.1.1, LACWWD36 has indicated that the Proposed Project would be required to upgrade and install approximately 5,500 feet of 16-inch diameter pipeline from the CLWA supply turnout to the existing 16-inch pipeline along Hasley Canyon Road, along with a new booster pump station, to supplement the District's capacity to deliver imported water supplies to the Project and other portions of LACWWD36's service area<sup>15</sup>. The upgraded pipeline will allow LACWWD36 to physically receive an additional amount of at least 800 AFY of imported water supplies. It is anticipated the upgraded pipeline will be installed prior to water deliveries to the Project.

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<sup>15</sup> Construction of a new larger pipeline will allow LACWWD36 to meet its projected water needs from stored water and State Water Project water, which could assist in reducing LACWWD36's reliance on groundwater. The construction of this new larger pipeline would allow LACWWD36 to gain access to water that CLWA already has, but that was previously not available to LACWWD36 due to pipeline capacity issues.

As discussed previously, CLWA's 2002 Draft Recycled Water Master Plan included recycled water demands for the golf course (Hasley Canyon Golf Course) included in the approved Previous Project on the Property. CLWA is currently updating its Recycled Water Master Plan. Based on discussion with CLWA it appears the Recycled Water Master Plan may recommend a recycled water system that will be smaller than that envisioned in the 2002 Recycled Water Master Plan. Plans to provide recycled water within LACWWD36's service area, including in the vicinity of the Property, are uncertain, due to changes in anticipated costs for a recycled water system of the size envisioned in the 2002 Recycled Water Master Plan. Because there is no recycled water supply in the project's vicinity and CLWA's updated Recycled Water Master Plan may not include providing recycled water in the vicinity of the Property, recycled water has not been included as a future water supply source through the year 2040 for LACWWD36 in this Assessment. However, use of recycled water will reduce the need for potable water supplies (including groundwater and imported water supplies) which can be used in other areas of CLWA's service area, including the Property, where recycled water may not be accessible.

#### **4.2 Groundwater Supplies**

Purveyors within CLWA's service area produce groundwater from the Alluvial aquifer and the Saugus Formation. As discussed in Section 3.2, CLWA's 2010 UWMP and the existing groundwater operating plan indicate the long-term sustainable yield from the Alluvial aquifer ranges between 30,000 AFY and 40,000 AFY, during normal years, and between 30,000 AFY and 35,000 AFY, during locally dry years. The long-term sustainable yield from the Saugus Formation ranges between 7,500 AFY and 15,000 AFY, during normal years, and between 15,000 AFY and 35,000 AFY, during locally dry years.

LACWWD36 does not anticipate producing groundwater from the Alluvial aquifer. However, use of groundwater from the Alluvial aquifer by other agencies to meet a

portion of the overall water demands within CLWA's service area provides additional flexibility in the amount of imported water supplies available to LACWWD36 through CLWA.

As discussed in Section 3.2.2, LACWWD36 currently produces groundwater from the Saugus Formation through a well with a capacity of 2,800 gpm (or 1,800 AFY based on a 40 percent operating factor). CLWA's 2010 UWMP projected LACWWD36 would produce up to 1,000 AFY from the Saugus Formation by the year 2040 (during a single dry year). LACWWD36 has more than sufficient capacity to produce the projected water quantities from the Saugus Formation through its existing groundwater well.

#### **4.3 Future Supplies**

Tables 8 through 10, which are based on CLWA's 2010 UWMP, show projected water demands and sources of water supply for all purveyors within CLWA's service area, under future normal, single dry, and multiple dry year scenarios, from 2015 to 2040. As discussed in Section 2.0, construction of the Proposed Project is anticipated to commence in 2015 and be completed by 2020. The total water demand for the Project during normal year scenarios is 593 AFY. During single and multiple dry year scenarios, the total water demand for the Project is estimated to increase to 666 AFY, based on the proportionate increases in water use from normal to single and multiple dry year water demands within CLWA's service area as presented in CLWA's 2010 UWMP. Tables 8 through 10 include the total water demands for the Proposed Project during normal, single dry, and multiple dry year scenarios, of which 251 AFY were incorporated in CLWA's 2010 UWMP. The remaining water demands for the Proposed Project are included in LACWWD36's future water demands in this Assessment.

Purveyors within CLWA's service area have historically met all of their water demands with imported water, groundwater, and recycled water supplies. Although water supplies have historically been reliable, CLWA has prepared a Water Shortage Contingency Plan in its 2010 UWMP, pursuant to California Water Code Division 6, Part 2.10, Sections

10632 and Government Code 66473.7, that identifies actions that can be taken by purveyors to respond to a catastrophic interruption of water supply. Tables 8 through 10 show available water supplies within CLWA's service area allowing water purveyors to meet all water demand projections, including the Project, with an overall water surplus of at least 20,000 AFY, from 2015 to 2040 under normal, single dry, and multiple dry year scenarios.

**Table 8. CLWA's Projected Demands and Supplies - Normal Years (AFY)**

	2015	2020	2025	2030	2035	2040
<b><u>Existing Supplies</u></b>						
Alluvial Aquifer	24,000	24,000	24,000	25,000	25,000	25,000
Saugus Formation [1]	9,225	10,225	10,225	10,225	10,225	10,225
Recycled Water	325	325	325	325	325	325
Imported Water (SWP)	58,100	57,900	57,600	57,400	57,400	57,400
Imported Water (Flexible Storage Accounts)	0	0	0	0	0	0
Imported Water (Buena Vista-Rosedale)	11,000	11,000	11,000	11,000	11,000	11,000
Imported Water (Other) [2]	1,607	1,607	1,607	1,607	1,607	1,607
Banking Programs (Rosedale Rio-Bravo)	0	0	0	0	0	0
Banking Programs (Semitropic)	0	0	0	0	0	0
Banking Programs (Other) [3]	0	0	0	0	0	0
Total (Existing)	104,257	105,057	104,757	105,557	105,557	105,557
<b><u>Planned Supplies</u></b>						
Alluvial Aquifer	0	1,000	2,000	3,000	4,000	5,000
Saugus Formation [1]	1,375	1,375	1,375	1,375	1,375	1,375
Recycled Water [4]	975	2,675	5,175	7,725	10,225	13,725
Banking Programs	0	0	0	0	0	0
Total (Planned)	2,350	5,050	8,550	12,100	15,600	20,100
<b><u>Total Supplies (Existing and Planned)</u></b>	<b>106,607</b>	<b>110,107</b>	<b>113,307</b>	<b>117,657</b>	<b>121,157</b>	<b>125,657</b>
<b><u>Total Demands (CLWA) [5]</u></b>						
(Includes Portion of Project Demands) [6]	72,343	71,908	80,236	88,564	96,892	105,220
(Includes Entire Project Demands) [7]	72,343	72,250	80,578	88,906	97,234	105,562
<b><u>CLWA Surplus (With Entire Project)</u></b>	<b>34,264</b>	<b>37,857</b>	<b>32,729</b>	<b>28,751</b>	<b>23,923</b>	<b>20,095</b>

**Source:** CLWA's 2010 UWMP

**Notes:**

- [1] CLWA's 2010 UWMP incorporates LACWWD36's Saugus Formation well, construction completed in January 2012, as a "Planned" supply
- [2] Includes Newhall Land's water transfer supplies from Nickel Water in Kern County for VWC
- [3] Includes Newhall Land's banked groundwater supplies from Semitropic for VWC
- [4] Excludes 50 AFY of recycled water supplies for LACWWD36 (projected in CLWA's 2010 UWMP) beginning in 2020
- [5] Based on water demand projections incorporating conservation from SBX7-7 requirements (recycled water reductions are excluded)
- [6] Includes 251 AFY of Proposed Project water demands estimated in CLWA's 2010 UWMP (See Section 2.2) at full buildout. It is anticipated Proposed Project construction will begin in 2015 and require 40 AFY for initial construction purposes. It is assumed the 251 AFY of water demands included in 2015 incorporate the 40 AFY of water needed during initial construction of the Proposed Project.
- [7] Includes an additional 342 AFY of water demands from the Proposed Project (See Section 2.2) at full buildout

**Table 9. CLWA's Projected Demands and Supplies - Single Dry Years (AFY)**

	2015	2020	2025	2030	2035	2040
<b><u>Existing Supplies</u></b>						
Alluvial Aquifer	20,300	20,250	20,200	21,050	21,050	21,025
Saugus Formation [1]	20,400	20,400	20,400	20,400	20,400	20,400
Recycled Water	325	325	325	325	325	325
Imported Water (SWP)	11,900	11,000	9,999	9,100	9,100	9,101
Imported Water (Flexible Storage Accounts)	6,060	4,680	4,681	4,679	4,680	4,680
Imported Water (Buena Vista-Rosedale)	11,000	11,000	11,000	11,000	11,000	11,000
Imported Water (Other) [2]	1,607	1,607	1,607	1,607	1,607	1,607
Banking Programs (Rosedale Rio-Bravo)	20,000	20,000	20,000	20,000	20,000	20,000
Banking Programs (Semitropic)	15,000	15,000	0	0	0	0
Banking Programs (Other) [3]	4,950	4,950	4,950	4,950	4,950	4,950
<b>Total (Existing)</b>	<b>111,542</b>	<b>109,212</b>	<b>93,162</b>	<b>93,111</b>	<b>93,112</b>	<b>93,088</b>
<b><u>Planned Supplies</u></b>						
Alluvial Aquifer	200	1,250	2,300	3,850	4,850	5,875
Saugus Formation [1]	3,700	13,700	13,700	13,700	13,700	13,700
Recycled Water [4]	975	2,675	5,175	7,725	10,225	13,725
Banking Programs	0	0	10,000	10,000	20,000	20,000
<b>Total (Planned)</b>	<b>4,875</b>	<b>17,625</b>	<b>31,175</b>	<b>35,275</b>	<b>48,775</b>	<b>53,300</b>
<b><u>Total Supplies (Existing and Planned)</u></b>	<b>116,417</b>	<b>126,837</b>	<b>124,337</b>	<b>128,386</b>	<b>141,887</b>	<b>146,388</b>
<b><u>Total Demands (CLWA) [5]</u></b>						
(Includes Portion of Project Demands) [6]	80,350	80,757	89,926	99,096	108,265	117,434
(Includes Entire Project Demands) [7]	80,350	81,172	90,341	99,511	108,680	117,849
<b><u>CLWA Surplus (With Entire Project)</u></b>	<b>36,067</b>	<b>45,665</b>	<b>33,996</b>	<b>28,875</b>	<b>33,207</b>	<b>28,539</b>

**Source:** CLWA's 2010 UWMP

**Notes:**

- [1] CLWA's 2010 UWMP incorporates LACWWD36's Saugus Formation well, construction completed in January 2012, as a "Planned" supply
- [2] Includes Newhall Land's water transfer supplies from Nickel Water in Kern County for VWC
- [3] Includes Newhall Land's banked groundwater supplies from Semitropic for VWC
- [4] Excludes 50 AFY of recycled water supplies for LACWWD36 (projected in CLWA's 2010 UWMP) beginning in 2020
- [5] Based on water demand projections incorporating conservation from SBX7-7 requirements (recycled water reductions are excluded)
- [6] Includes 251 AFY of Project water demands estimated in CLWA's 2010 UWMP (See Section 2.2) at full buildout. It is anticipated Proposed Project construction will begin in 2015 and require 40 AFY for initial construction purposes. It is assumed the 251 AFY of water demands included in 2015 incorporate the 40 AFY of water needed during initial construction of the Proposed Project.
- [7] Includes an additional 415 AFY of water demands from the Proposed Project (See Section 2.2) at full buildout. Water demands during dry years are based on the proportions of normal water demands to multiple dry year water demands, as presented in CLWA's 2010 UWMP

**Table 10. CLWA's Projected Demands and Supplies - Multiple Dry Years (AFY)**

	2015	2020	2025	2030	2035	2040
<b><u>Existing Supplies</u></b>						
Alluvial Aquifer	20,425	20,425	20,425	21,825	21,825	21,825
Saugus Formation [1]	19,700	19,700	19,700	19,700	19,700	19,700
Recycled Water	325	325	325	325	325	325
Imported Water (SWP)	32,900	32,900	33,000	33,000	33,000	33,000
Imported Water (Flexible Storage Accounts)	1,510	1,170	1,170	1,170	1,170	1,170
Imported Water (Buena Vista-Rosedale)	11,000	11,000	11,000	11,000	11,000	11,000
Imported Water (Other) [2]	1,607	1,607	1,607	1,607	1,607	1,607
Banking Programs (Rosedale Rio-Bravo)	15,000	15,000	15,000	15,000	15,000	15,000
Banking Programs (Semitropic)	11,500	11,500	0	0	0	0
Banking Programs (Other) [3]	4,950	4,950	4,950	4,950	4,950	4,950
Total (Existing)	118,917	118,577	107,177	108,577	108,577	108,577
<b><u>Planned Supplies</u></b>						
Alluvial Aquifer	0	1,000	2,000	3,000	4,000	5,000
Saugus Formation [1]	4,625	11,950	11,950	11,950	11,950	11,950
Recycled Water [4]	975	2,675	5,175	7,725	10,225	13,725
Banking Programs	0	0	7,500	7,500	15,000	15,000
Total (Planned)	5,600	15,625	26,625	30,175	41,175	45,675
<b><u>Total Supplies (Existing and Planned)</u></b>	<b>124,517</b>	<b>134,202</b>	<b>133,802</b>	<b>138,752</b>	<b>149,752</b>	<b>154,252</b>
<b><u>Total Demands (CLWA) [5]</u></b>						
(Includes Portion of Project Demands) [6]	80,350	80,757	89,926	99,096	108,265	117,434
(Includes Entire Project Demands) [7]	80,350	81,172	90,341	99,511	108,680	117,849
<b><u>CLWA Surplus (With Entire Project)</u></b>	<b>44,167</b>	<b>53,030</b>	<b>43,461</b>	<b>39,241</b>	<b>41,072</b>	<b>36,403</b>

**Source:** CLWA's 2010 UWMP

**Notes:**

- [1] CLWA's 2010 UWMP incorporates LACWWD36's Saugus Formation well, construction completed in January 2012, as a "Planned" supply
- [2] Includes Newhall Land's water transfer supplies from Nickel Water in Kern County for VWC
- [3] Includes Newhall Land's banked groundwater supplies from Semitropic for VWC
- [4] Excludes 50 AFY of recycled water supplies for LACWWD36 (projected in CLWA's 2010 UWMP) beginning in 2020
- [5] Based on water demand projections incorporating conservation from SBX7-7 requirements (recycled water reductions are excluded)
- [6] Includes 251 AFY of Proposed Project water demands estimated in CLWA's 2010 UWMP (See Section 2.2) at full buildout. It is anticipated Proposed Project construction will begin in 2015 and require 40 AFY for initial construction purposes. It is assumed the 251 AFY of water demands included in 2015 incorporate the 40 AFY of water needed during initial construction of the Proposed Project.
- [7] Includes an additional 415 AFY of water demands from the Proposed Project (See Section 2.2) at full buildout. Water demands during multiple dry years are based on the proportions of normal water demands to multiple dry year water demands, as presented in CLWA's 2010 UWMP

Based on CLWA's 2010 UWMP, Tables 11 through 13 show LACWWD36's projected water demands and sources of water supply, under future normal, single dry, and multiple dry year scenarios, from 2015 to 2040. LACWWD36 has historically met all of its water demands with imported water supplies purchased from CLWA, groundwater production, and purchases of Alluvial aquifer ground water from Los Angeles County Honor Farm. Tables 11 through 13 show available water supplies allowing LACWWD36 to meet all water demand projections, including the Project, from 2015 to 2040 under normal, single dry, and multiple dry year scenarios.

LACWWD36 can rely upon up to 1,000 AFY of groundwater production from the Saugus Formation, consistent with the groundwater operating plan. LACWWD36 can also rely on imported water purchased from CLWA. CLWA's water supply sources (including SWP water, Flexible Storage Accounts, water transfers, groundwater banking programs, and recycled water) provide reliability and flexibility allowing purveyors within CLWA's service area, including LACWWD36, to meet all water demands. As discussed previously, LACWWD36 is planning to upgrade the existing pipeline from its connection with CLWA to a 16-inch diameter pipeline which will allow LACWWD36 to receive at least 800 AFY more of imported water supplies than projected in CLWA's 2010 UWMP as available to LACWWD36.



**Table 11. LACWWD36's Projected Demands and Supplies - Normal Years (AFY)**

	2015	2020	2025	2030	2035	2040
<b><u>Existing Supplies</u></b>						
Alluvial Aquifer	0	0	0	0	0	0
Saugus Formation [1]	0	0	0	0	0	0
Recycled Water	0	0	0	0	0	0
Imported Water (SWP)	1,656	1,943	2,217	2,489	2,688	2,901
Imported Water (Flexible Storage Accounts)	0	0	0	0	0	0
Imported Water (Buena Vista-Rosedale)	325	375	450	500	525	575
Banking Programs (Rosedale Rio-Bravo)	0	0	0	0	0	0
Banking Programs (Semitropic)	0	0	0	0	0	0
Total (Existing)	1,981	2,318	2,667	2,989	3,213	3,476
<b><u>Planned Supplies</u></b>						
Alluvial Aquifer	0	0	0	0	0	0
Saugus Formation [1]	500	500	500	500	500	500
Recycled Water [2]	0	0	0	0	0	0
Banking Programs	0	0	0	0	0	0
Imported Water Supplies [3]	0	800	800	800	800	800
Total (Planned)	500	1,300	1,300	1,300	1,300	1,300
<b><u>Total Supplies (Existing and Planned)</u></b>	<b>2,481</b>	<b>3,618</b>	<b>3,967</b>	<b>4,289</b>	<b>4,513</b>	<b>4,776</b>
<b><u>Total Demands (LACWWD36) [4]</u></b>						
(Includes Portion of Project Demands) [5]	1,584	1,802	2,146	2,489	2,833	3,177
(Includes Entire Project Demands) [6]	1,584	2,144	2,488	2,831	3,175	3,519
<b><u>Surplus (With Entire Project)</u></b>						
LACWWD36	897	1,474	1,479	1,458	1,338	1,257
CLWA (Overall) [7]	34,264	37,857	32,729	28,751	23,923	20,095

**Source:** CLWA's 2010 UWMP

**Notes:**

- [1] CLWA's 2010 UWMP incorporates LACWWD36's Saugus Formation well, construction completed in January 2012, as a "Planned" supply
- [2] Excludes 50 AFY of recycled water supplies for LACWWD36 (projected in CLWA's 2010 UWMP) beginning in 2020
- [3] Based on additional capacity of at least 800 AFY through installation of new 16-inch imported water connection with CLWA.
- [4] Based on water demand projections incorporating conservation (recycled water reductions are excluded)
- [5] Includes 251 AFY of Proposed Project water demands estimated in CLWA's 2010 UWMP (See Section 2.2) at full buildout. It is anticipated Proposed Project construction will begin in 2015 and require 40 AFY for initial construction purposes. It is assumed the 251 AFY of water demands included in 2015 incorporate the 40 AFY of water needed during initial construction of the Proposed Project.
- [6] Includes an additional 342 AFY of water demands from the Proposed Project (See Section 2.2) at full buildout.
- [7] CLWA overall projected surplus (See Table 8)

**Table 12. LACWWD36's Projected Demands and Supplies - Single Dry Years (AFY)**

	2015	2020	2025	2030	2035	2040
<b><u>Existing Supplies</u></b>						
Alluvial Aquifer	0	0	0	0	0	0
Saugus Formation [1]	0	0	0	0	0	0
Recycled Water	0	0	0	0	0	0
Imported Water (SWP)	405	436	440	444	468	499
Imported Water (Flexible Storage Accounts)	206	185	206	228	241	257
Imported Water (Buena Vista-Rosedale)	400	450	500	550	575	625
Banking Programs (Rosedale Rio-Bravo)	775	900	1,000	1,075	1,125	1,200
Banking Programs (Semitropic)	510	594	0	0	0	0
Total (Existing)	2,296	2,565	2,146	2,297	2,409	2,581
<b><u>Planned Supplies</u></b>						
Alluvial Aquifer	0	0	0	0	0	0
Saugus Formation [1]	500	825	875	925	975	1,000
Recycled Water [2]	0	0	0	0	0	0
Banking Programs	0	0	440	488	1,028	1,097
Imported Water Supplies [3]	0	800	800	800	800	800
Total (Planned)	500	1,625	2,115	2,213	2,803	2,897
<b><u>Total Supplies (Existing and Planned)</u></b>	<b>2,796</b>	<b>4,190</b>	<b>4,261</b>	<b>4,510</b>	<b>5,212</b>	<b>5,478</b>
<b><u>Total Demands (LACWWD36) [4]</u></b>						
(Includes Portion of Project Demands) [5]	1,579	2,020	2,407	2,794	3,181	3,568
(Includes Entire Project Demands) [6]	1,579	2,435	2,822	3,209	3,596	3,983
<b><u>Surplus (With Entire Project)</u></b>						
LACWWD36	1,217	1,755	1,439	1,301	1,616	1,495
CLWA (Overall) [7]	36,067	45,665	33,996	28,875	33,207	28,539

**Source:** CLWA's 2010 UWMP

**Notes:**

- [1] CLWA's 2010 UWMP incorporates LACWWD36's Saugus Formation well, construction completed in January 2012, as a "Planned" supply
- [2] Excludes 50 AFY of recycled water supplies for LACWWD36 (projected in CLWA's 2010 UWMP) beginning in 2020
- [3] Based on additional capacity of at least 800 AFY through installation of new 16-inch imported water connection with CLWA.
- [4] Based on water demand projections incorporating conservation (recycled water reductions are excluded)
- [5] Includes 251 AFY of Proposed Project water demands estimated in CLWA's 2010 UWMP (See Section 2.2) at full buildout. It is anticipated Proposed Project construction will begin in 2015 and require 40 AFY for initial construction purposes. It is assumed the 251 AFY of water demands included in 2015 incorporate the 40 AFY of water needed during initial construction of the Proposed Project.
- [6] Includes an additional 415 AFY of water demands from the Proposed Project (See Section 2.2) at full buildout. Water demands during dry years are based on the proportions of normal water demands to multiple dry year water demands, as presented in CLWA's 2010 UWMP
- [7] CLWA overall projected surplus (See Table 9)

**Table 13. LACWWD36's Projected Demands and Supplies - Multiple Dry Years (AFY)**

	2015	2020	2025	2030	2035	2040
<b><u>Existing Supplies</u></b>						
Alluvial Aquifer	0	0	0	0	0	0
Saugus Formation [1]	0	0	0	0	0	0
Recycled Water	0	0	0	0	0	0
Imported Water (SWP)	1,117	1,278	1,423	1,592	1,691	1,801
Imported Water (Flexible Storage Accounts)	51	45	50	56	60	64
Imported Water (Buena Vista-Rosedale)	400	450	500	550	575	625
Banking Programs (Rosedale Rio-Bravo)	577	662	723	801	842	890
Banking Programs (Semitropic)	390	447	0	0	0	0
Total (Existing)	2,536	2,882	2,696	3,000	3,168	3,380
<b><u>Planned Supplies</u></b>						
Alluvial Aquifer	0	0	0	0	0	0
Saugus Formation [1]	500	750	800	825	850	875
Recycled Water [2]	0	0	0	0	0	0
Banking Programs	0	0	323	362	769	819
Imported Water Supplies [3]	0	800	800	800	800	800
Total (Planned)	500	1,550	1,923	1,987	2,419	2,494
<b><u>Total Supplies (Existing and Planned)</u></b>	<b>3,036</b>	<b>4,432</b>	<b>4,619</b>	<b>4,987</b>	<b>5,587</b>	<b>5,874</b>
<b><u>Total Demands (LACWWD36) [4]</u></b>						
(Includes Portion of Project Demands) [5]	1,579	2,020	2,407	2,794	3,181	3,568
(Includes Entire Project Demands) [6]	1,579	2,435	2,822	3,209	3,596	3,983
<b><u>Surplus (With Entire Project)</u></b>						
LACWWD36	1,457	1,997	1,797	1,778	1,991	1,891
CLWA (Overall) [7]	44,167	53,030	43,461	39,241	41,072	36,403

**Source:** CLWA's 2010 UWMP

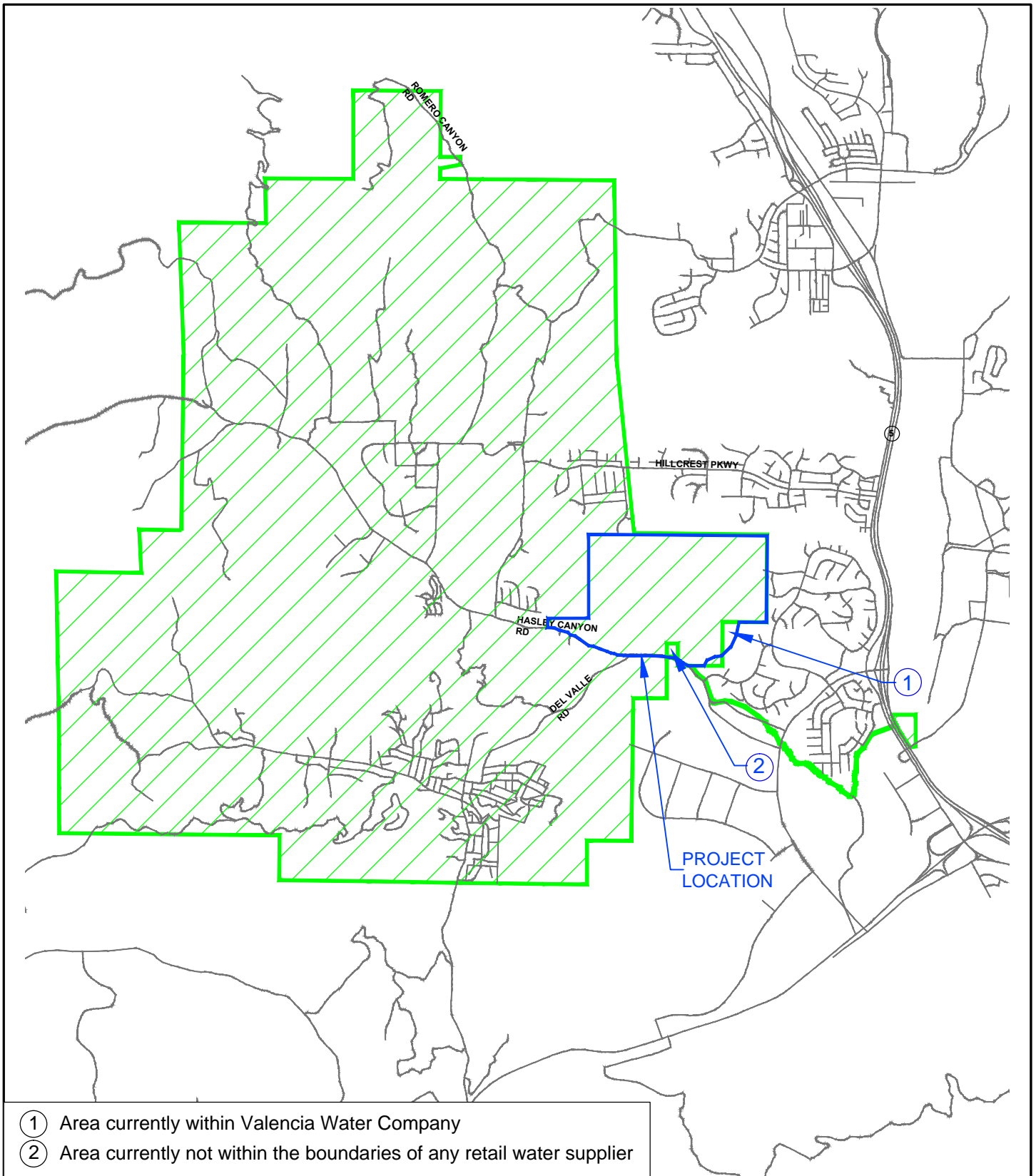
**Notes:**

- [1] CLWA's 2010 UWMP incorporates LACWWD36's Saugus Formation well, construction completed in January 2012, as a "Planned" supply
- [2] Excludes 50 AFY of recycled water supplies for LACWWD36 (projected in CLWA's 2010 UWMP) beginning in 2020
- [3] Based on additional capacity of at least 800 AFY through installation of new 16-inch imported water connection with CLWA.
- [4] Based on water demand projections incorporating conservation (recycled water reductions are excluded)
- [5] Includes 251 AFY of Proposed Project water demands estimated in CLWA's 2010 UWMP (See Section 2.2) at full buildout. It is anticipated Proposed Project construction will begin in 2015 and require 40 AFY for initial construction purposes. It is assumed the 251 AFY of water demands included in 2015 incorporate the 40 AFY of water needed during initial construction of the Proposed Project.
- [6] Includes an additional 415 AFY of water demands from the Proposed Project (See Section 2.2) at full buildout. Water demands during multiple dry years are based on the proportions of normal water demands to multiple dry year water demands, as presented in CLWA's 2010 UWMP
- [7] CLWA overall projected surplus (See Table 10)

As presented in Section 3.0, reliable access to imported water and groundwater supplies, as well as recycled water supplies, have allowed water producers within CLWA's service area to historically meet water demands, including during single and multiple dry years. Based on the demonstrated reliability of its water supply sources, and taking into account existing and planned future water uses (including relevant agricultural and manufacturing uses), LACWWD36 has sufficient, reliable, and sustainable water supplies to meet existing water demands and future growth, including the Project, during normal, single dry and multiple dry years, for twenty years.

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FIGURE 1



**LEGEND :**



LOS ANGELES WATERWORKS DISTRICT NO. 36 SERVICE AREA BOUNDARY



861 VILLAGE OAKS DRIVE, STE 100  
COVINA, CALIFORNIA 91724  
TEL: (626) 967-6202  
FAX: (626) 331-7065

2171 E Francisco Blvd., Suite K  
San Rafael California 94901  
2651 W Guadalupe Rd., Suite A209  
Mesa Arizona 85202



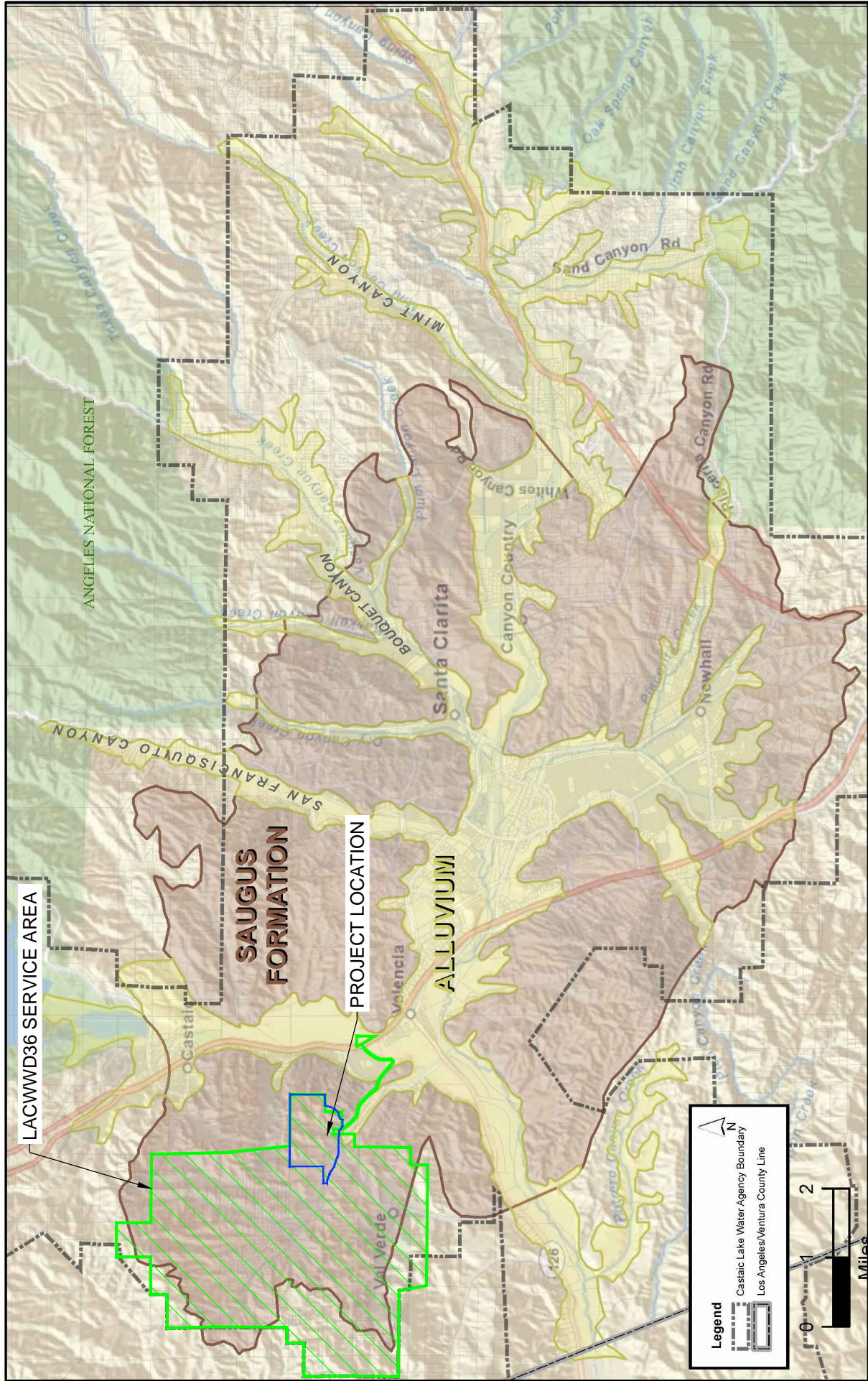
APPROXIMATE SCALE  
2,000' 0 2,000'

**WATER SUPPLY ASSESSMENT**

**PROJECT LOCATION**



FIGURE 2



Source : Luhdorff & Scalmanini Consulting Engineers (from CLWA'S 2010 UWMP); Los Angeles County Department of Public Works

**WATER SUPPLY ASSESSMENT**

**SANTA CLARA RIVER VALLEY EAST GROUNDWATER SUBBASIN**



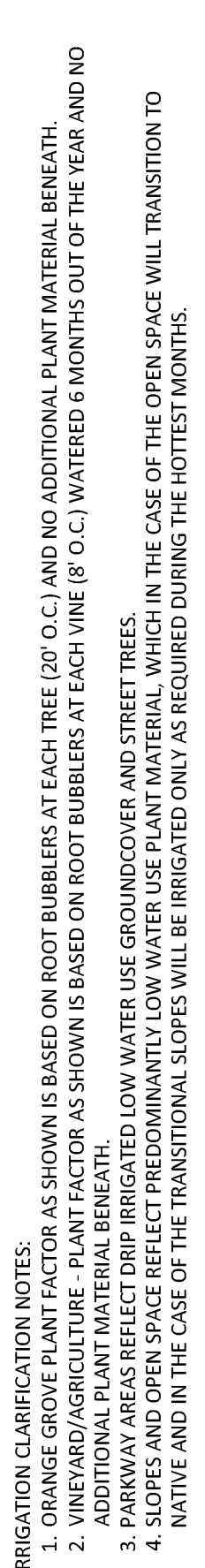
**STETSON  
ENGINEERS INC.**

861 VILLAGE OAKS DRIVE, STE 100  
COVINA, CALIFORNIA 91724  
TEL: (626) 967-6202  
FAX: (626) 331-7065

2171 E Francisco Blvd., Suite K  
San Rafael California 94901  
2651 W Guadalupe Rd., Suite A209  
Mesa Arizona 85202

## **APPENDIX A**





1. ORANGE GROVE PLANT FACTOR AS SHOWN IS BASED ON ROOT BUBBLERS AT EACH TREE (20' O.C.) AND NO ADDITIONAL PLANT MATERIAL BENEATH.
2. VINEYARD/AGRICULTURE - PLANT FACTOR AS SHOWN IS BASED ON ROOT BUBBLERS AT EACH VINE (8' O.C.) WATERED 6 MONTHS OUT OF THE YEAR AND NO ADDITIONAL PLANT MATERIAL BENEATH.
3. PARKWAY AREAS REFLECT DRIP IRRIGATED LOW WATER USE GROUND COVER AND STREET TREES.

4. SLOPES AND OPEN SPACE REFLECT PREDOMINANTLY LOW WATER USE PLANT MATERIAL, WHICH IN THE CASE OF THE OPEN SPACE WILL TRANSITION TO NATIVE AND IN THE CASE OF THE TRANSITIONAL SLOPES WILL BE IRRIGATED ONLY AS REQUIRED DURING THE HOTTEST MONTHS.

SITE GAP

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3190-82 Alcorcon Drive

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Biology Department, University of Oregon  
E-mail: jk12@uoregon.edu

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100110 1 1 000 00000000 00 0049

JOB NO. 11-006 OCTOBER, 23, 2013  
REV. APRIL 11, 2014

	111.0 ACRES	
	255.0 ACRES	
SUBTOTAL		
6,821,370 S.F.		
7,640,424 S.F.	175.4 ACRES	
TOTAL	430.4 ACRES	
		957,279,137
		180.27

IRRIGATION CLARIFICATION NOTES:

1. ORANGE GROVE PLANT FACTOR AS SHOWN IS BASED ON ROOT BUBBLERS AT EACH TREE (20' O.C.) AND NO ADDITIONAL PLANT MATERIAL BENEATH.
2. VINEYARD/AGRICULTURE - PLANT FACTOR AS SHOWN IS BASED ON ROOT BUBBLERS AT EACH VINE (8' O.C.) WATERED 6 MONTHS OUT OF THE YEAR AND NO ADDITIONAL PLANT MATERIAL BENEATH.
3. PARKWAY AREAS REFLECT DRIP IRRIGATED LOW WATER USE GROUND COVER AND STREET TREES.

4. SLOPES AND OPEN SPACE REFLECT PREDOMINANTLY LOW WATER USE PLANT MATERIAL, WHICH IN THE CASE OF THE OPEN SPACE WILL TRANSITION TO NATIVE AND IN THE CASE OF THE TRANSITIONAL SLOPES WILL BE IRRIGATED ONLY AS REQUIRED DURING THE HOTTEST MONTHS.

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JOB NO. 11-006 OCTOBER, 23, 2013  
REV. APRIL 11, 2014